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INQUIRY

MEDICAL QUALITY AND EFFECT

ALREADY

LEADLINE WATER

AN
INQUIRY
INTO THE
MEDICINAL QUALITIES AND EFFECTS
OF THE
AERATED
ALKALINE WATER.

Dr. Hill

AN
INQUIRY
INTO THE
MEDICINAL QUALITIES AND EFFECTS
OF THE
AERATED
ALKALINE WATER:
ILLUSTRATED BY
EXPERIMENTS AND CASES.

By JOHN MONCREIFF, APOTHECARY,
HONORARY MEMBER OF THE ROYAL PHYSICAL SOCIETY,
EDINBURGH.

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INQUIRY
INTO THE
MEDICINAL QUALITIES AND EFFECTS
OF THE
AERATED
ALKALINE WATER
PREPARED BY
EXPERIMENTS AND CARE

BY JOHN MONRO, M.D.
HONORARY MEMBER OF THE ROYAL MEDICAL SOCIETY
EDINBURGH.

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EDINBURGH.

1842

TO
DOCTOR WILLIAM MONCRIEFFE,
PHYSICIAN IN BRISTOL,
FELLOW OF THE ROYAL COLLEGE OF PHYSICIANS,
EDINBURGH,
&c. &c. &c.

THIS
TREATISE

IS
RESPECTFULLY INSCRIBED,

BY HIS
MOST AFFECTIONATE FRIEND,

AND HUMBLE SERVANT,

THE AUTHOR.

I N T R O D U C T I O N.

THE action of Medicines on the human body, is an important and curious subject of speculation. No branch of Medical knowledge is more difficult to attain, or has so much eluded the researches of philosophers and physicians.

The discoveries which have been made in the science of Chemistry, have, particularly of late, contributed

A much

much to enlarge the stock of Medical knowledge, and warrant us to suppose, that the practice of Physic may still undergo considerable changes and improvements.

EXPERIENCE of the action of Medicines, is the only criterion for ascertaining the truth or fallacy of theory. With this guide, we shall endeavour to explain the qualities and effects of the AERATED ALKALINE WATER.

THE knowledge of this medicine, as yet scarcely reaches beyond Medical men, or those persons who may have received benefit from its use: We trust, therefore, it will not be an unnecessary or presumptuous attempt,

tempt, to lay before the public at large, a plain account of its virtues, established by undoubted facts, and satisfactory experiments.

As the Author means, at present, rather to throw out hints, than fully to discuss the subject, he intends to comprize his remarks within as small bounds as possible; and if the perusal of this Treatise shall engage more general attention to the Aerated Alkaline Water, or contribute to alleviate any of those painful disorders which embitter human life, the object of the Author will be gained.

THE world has been too long imposed upon by the audacious attempts
of

of interested empirics ; while their dangerous specifics deserve universal reprobation ; those medicinal compositions, whose ingredients are known, and efficacy acknowledged, merit general regard,

It was but lately that the composition, denominated the Aerated Alkaline Water, was contrived, or introduced into Medical practice,

THE discovery of Fixed Air by Dr. *Black*, and of its general properties and effects, by subsequent philosophers, have engaged the attention of the Medical world to a subject both curious and valuable.

MR.

MR. *Bewley* of Great Maffingham, in Norfolk, having discovered that Fixed Air was capable of neutralizing Alkaline Salts, Mr. *Colburne* of Bath was led to imagine that such a composition might be employed for the relief and cure of Gravelish disorders.

HIS knowledge of the power of Alkaline Salts in dissolving the human Calculi, though, from their irritating nature, they could not be long used without prejudice to the general health, naturally made him conjecture, that, if neutralized with Fixed Air, another powerful lithontriptic, they might be used with safety and advantage. Mr. *Colburne* was, at that time, suffering much from the Gravel himself. The success

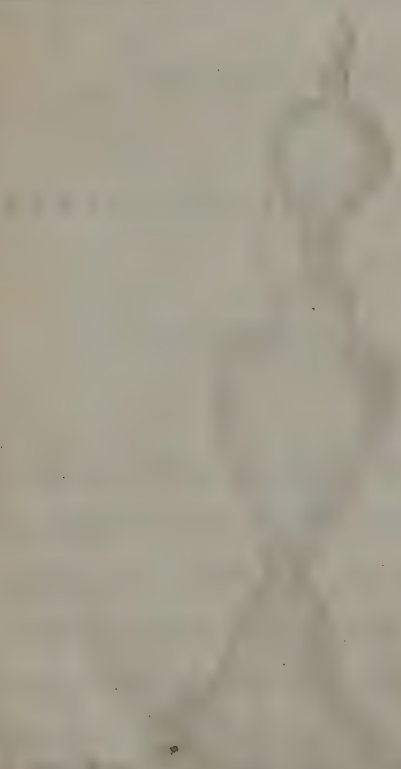
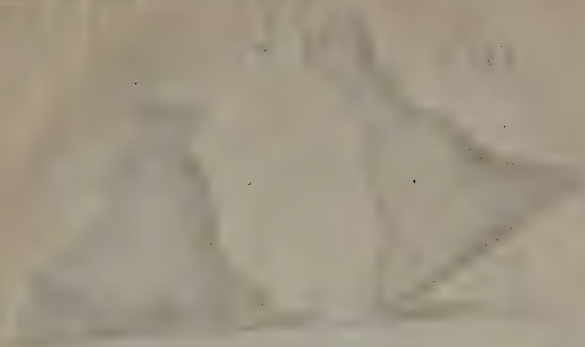
success of the medicine in his case, as published by Dr. *Falconer*, with a number of others, induced me, about six years ago, to provide myself with several sets of Dr. *Nooth's* apparatus for preparing it; since that time a great number of people have been supplied with this medicine from my shop, and have used it for a variety of complaints, but chiefly for the Gravel and Stone.

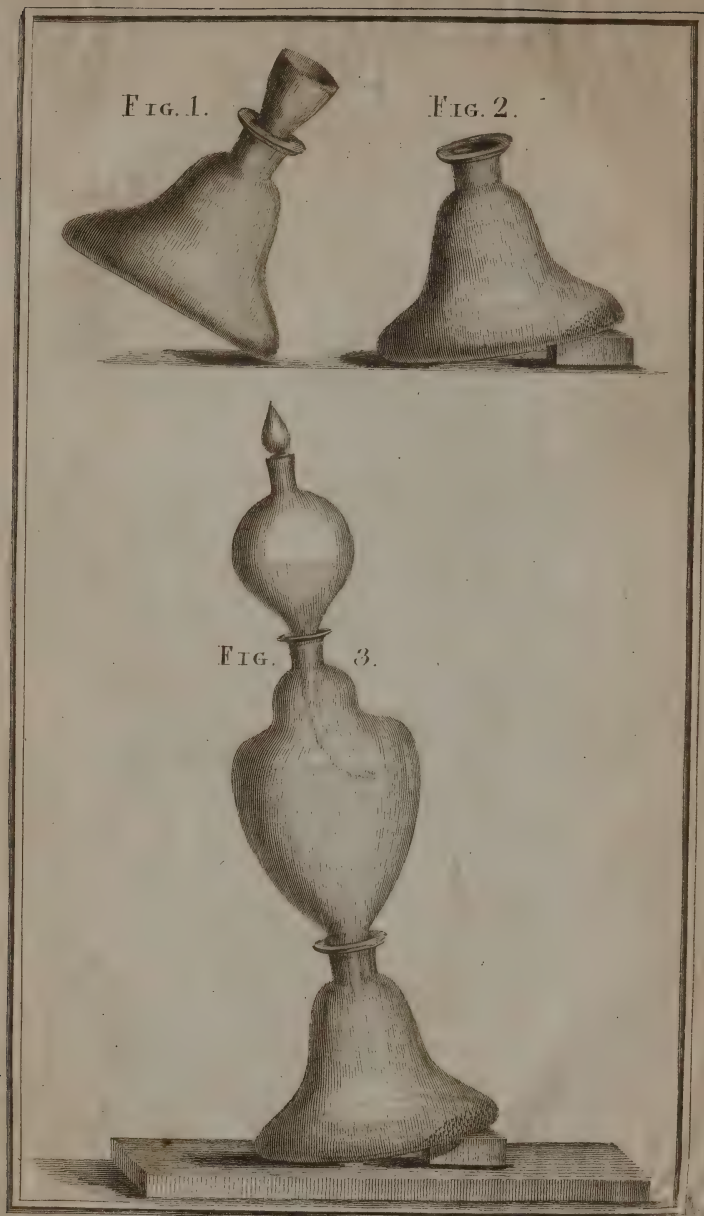
THOUGH we do not mean to attribute virtues to it, which it does not possess, yet we are warranted to believe, that its efficacy entitles it to more general use; and probably experience will prove its salutary nature in a number of diseases, for which it has scarcely as yet been employed.

THE

THE Author cannot close this Introduction, without requesting that those who have favoured him with their cases, and permitted them to be published, will be pleased to accept his most grateful acknowledgements.

THE benevolence of those Gentlemen will be abundantly rewarded, if, by the perusal of their cases, any of their fellow-sufferers shall experience the same happy benefit from the use of this medicine.





The Glass Machines, for preparing Aerated Alkaline Water, are made complete, of different sizes, by the Edinburgh Glass-house Company, at their Glass Manufactory, Leith.

M E T H O D

OF PREPARING THE

AERATED ALKALINE WATER.

FOR every English pint of water, that the middle part of the machine will contain, is required a quarter of an ounce of Salt of Tartar, half an ounce of Chalk, and half an ounce of the strong Vitriolic Acid.

B THE

THE operation to be managed in the following manner:

I. PUT the Salt of Tartar into a stone decanter, and pour on it about half an English pint of boiling water; allow it to stand for a night; then pour off the solution clear from any sediment that may be in the bottom of the decanter.

II. POUR the Vitriolic Acid into a decanter, and add to it about seven or eight times its quantity of water. Allow this mixture to stand for an hour, before any part of it is put into the bottom part of the machine.

III. PLACE the middle part of the machine, separated from the rest, on the

the wooden pedestal; and pour into it the solution of Salt of Tartar, and fill it with spring water, or distilled water. Put the chalk through the wide glass funnel into the bottom glass, holding it in the position, as represented in Fig. I.; and shake the chalk to one side. Place the bottom as represented in Fig. II. Take the funnel out of the bottom part. Put in the other glass funnel; through which pour in the diluted vitriolic acid, till it come in contact with the chalk. Remove this funnel; and immediately join to the bottom glass the other parts of the machine, see Fig. III. The fixed air will now rise into the water contained in the middle glass, forcing it up to the top part of the machine. When

no air is observed to pass up, agitate the machine gently: This will bring more of the acid into contact with the chalk, and occasion the air to rise as before. This may be repeated three or four times in the day; and when no more air will rise, it will be necessary to add a fresh supply of the diluted vitriolic acid, as above directed. The water raised into the top should be let down into the middle glass twice a day; which may be done by raising the top a little from the middle one.

THE machine, towards the end of the operation, will require to be shaken with more violence, which ought however to be done cautiously; the safest way, is to separate the middle from the
bottom

bottom glafs; then fhake the bottom, and apply the middle again immediately. By obferving this caution, the risk of burfting the machine will be prevented.

THE quantity of chalk and vitriolic acid ordered, is fufficient to complete the operation; but by obferving the above caution, fome of the fixed air will efcape, and confequently more of thefe ingredients may be required. The fame will take place when the operation is injudiciously haftened; as it requires a confiderable time for the water to abforb the fixed air.

A MACHINE, containing five or fix Englifh pints, will require three or
four

four days for completing the operation. The water may be deemed sufficiently prepared, when, on drinking a glass of it, no taste peculiar to the alkaline salt, but a taste sharp and acidulous, is perceived.

V. WHEN the operation is finished, let down the water from the top into the middle glass; separate the three glasses of the machine; bottle off the water into clean English pint bottles; cork the bottles with the best kind of new corks, and seal them over with wax. Place the bottles on their sides in a cool place; and the water will keep good for several months.

THE

THE Simple Aerated Water is prepared in the same manner; only leaving out the salt of tartar, half of the chalk, and half of the vitriolic acid. One half of the time will be sufficient to complete the operation.

N. B. The Aerated, or Aerated Alkaline, Water should be prepared in a cool place; and the machine kept clean. The middle and top glasses will be best cleaned by a little of the diluted vitriolic or marine acid; after which they should be well rinsed with water.

WHEN

WHEN a proper machine for preparing the Aerated Alkaline Water is not at hand, a medicine nearly similar may be prepared in the following manner :

DISSOLVE twenty grains of salt of tartar in two or three table spoonfuls of water ; add to the solution a table spoonful of the juice of lemons. This mixture should be swallowed immediately, and is the proper quantity for a dose ; and may be repeated three or four times in the day, as circumstances require.

THE quantity of the Aerated Alkaline Water usually taken, is a gill thrice a day, before breakfast, dinner,
ner,

ner, and supper. When the stomach will bear a larger quantity, an English pint of it may be taken in a day. When it proves cold to the stomach, or occasions flatulency, a tea spoonful or two of brandy, gin, or tincture of cardamoms, may be taken with each dose; but this addition is seldom necessary. When the irritation of the urinary passages is great, it may be of use to take a few drops of laudanum with each dose; but this ought to be discontinued whenever there is an abatement of these painful symptoms.

No particular diet or regimen is necessary to observed, while using this medicine, further than abstaining from acids, fat meat, and butter.

C. MEDIC-

MEDICINAL QUALITIES
AND
E F F E C T S
OF THE
AERATED ALKALINE WATER.

THE Aerated Alkaline Water being a chemical compound of Fixed Air, Salt of Tartar, and Water, we shall examine the properties of each of the ingredients apart, and then deduce, from their combination,

bination, the qualities and effects of this medicine.

I. FIXED AIR. This substance is very universally diffused through the animal, vegetable, and mineral kingdoms; and has been denominated *Gas Silvestre*, by Van Helmont,—*Fixed Air*, by Dr Black,—*Carbonic Acid Gas*, by Mr. Lavoisier,—*Aerial Acid*, *Acid of Chalk*, *Mephitic Acid*, by other chemists. Though we apprehend that the name, *Carbonic Acid Gas*, is the most proper of any that has been given to it; yet, as it is more generally known by the name, *Fixed Air*, given it by its discoverer, we shall adopt this in preference to any of the other designations.

CALCAREOUS

CALCAREOUS earths contain fixed air in great abundance; particularly chalk, marble, limestone, and the shells of fishes. It is also separated in considerable quantity during the fermentation of vegetable matters. It is to the presence of this body in a number of mineral waters, such as Pyrmont, Seltzer, German Spa, &c. that their medicinal virtues are to be ascribed.

WHEN Champaign wine, perry, cyder, or malt liquors, are poured out of a bottle, it is the fixed air contained in these, which occasions their sparkling or frothy appearances. When the fixed air has escaped from these liquors, which sometimes happens, owing

ing to bad corks, it may again be restored, by means of Dr. *Nooth's* machine, in the same way that water is impregnated with fixed air.

FIXED air can be rendered the instrument of health, disease, and death, according to the mode of its application. If an animal be immersed into pure fixed air, loss of sense and motion suddenly ensues, and death will be the inevitable consequence, if the animal be not quickly removed into common air. On the other hand, when properly managed, fixed air has been found to have salutary effects in the relief and cure of diseases.

FIXED

FIXED Air possesses solvent, stimulant, tonic, and antiseptic powers.

FROM these properties, it may be variously adapted to the purposes of medicine; as will better appear, when we consider it in its state of combination with salt of tartar, and water.

II. SALT OF TARTAR. This is an alkaline salt, named salt of tartar, from its being prepared from red or white tartar, which last is a saline earthy body, deposited from red or white wines on the sides of the casks in which they are contained.

THE same kind of salt, which tartar yields, can be obtained from all vegetable

table matters, excepting those of the marine kind, which contain a salt somewhat different. Pearl ashes, when purified as directed by the London and Edinburgh Pharmacopoeias, form a salt equally good as that prepared from tartar. This last is the only kind now employed. The name given to this salt by chemists, is the *Fixed Vegetable Alkali*; but as we wish to employ those names and terms most commonly known, we shall still continue its old name, viz. salt of tartar.

SALT of Tartar, as commonly to be met with in the shops, contains, beside an alkaline salt, a considerable quantity of fixed air. When an acid is added to
it,

it, the fixed air is disengaged, and a neutral salt formed.

ITS properties, as a medicine, are lithontriptic, antacid, and stimulant.

As a lithontriptic medicine, it forms the basis of many boasted medicines for gravelish disorders. When submitted to the action of quicklime, it forms one of the most powerful lithontriptics we know. The *caustic ley*, as it is called, is a medicine of this kind, and has been long celebrated; but the many instances which have occurred, of its hurtful effects on the general health, and of its producing diseases when long used, forbid its use in gravelish disorders, more especially as ano-

D ther

ther medicine, almost as powerful a lithontriptic, is now introduced into practice, I mean the Aerated Alkaline Water, which possesses no quality that can be in the least prejudicial.

SALT of tartar, as an antacid medicine, when taken in small doses, will correct the acidity common in complaints of the stomach, but ought to be used sparingly; and indeed magnesia is in general preferable for this purpose.

SALT of tartar, as a stimulant, will act on the nerves of the stomach, and may be of use in restoring its tone when impaired.

III. WATER.

III. WATER. This fluid was formerly considered as a pure element; but from the late discoveries in chemistry, it is found to be composed of the bases of vital and inflammable air, or, according to the new names, of *oxygen* and *hydrogen*. Mr. LAVOISIER's experiments are both curious and satisfactory on this head.

WATER is so universally diffused through our globe, so applicable to a variety of purposes, and its general uses so well known, that it is unnecessary to mention its various properties. It is sufficient to say, that it enters in a large proportion into the composition of the animal fluids; that it is capable of absorbing a considerable quantity
of

of fixed air, and may be considered as a very universal diluent, and general solvent.

WE now proceed to examine the medicinal qualities and effects of the Aerated Alkaline Water.—

THIS medicine, as we have already shown, is a chemical compound, of water, salt of tartar, and fixed air. The solution of salt of tartar absorbs the fixed air, and the salt becomes neutralized by it.

WHEN this medicine is taken by a person in perfect health, its sensible effects are, an increase of the quantity of urine, which is of a paler colour than usual;

usual; the circulation of the blood is quickened, the insensible perspiration promoted, and the appetite and digestion increased. It is reasonable to suppose, that to a certain degree this medicine is decomposed in the stomach, a portion of the fixed air being disengaged from the alkali, but not so much as to leave the alkali so caustic as it was before it was neutralized with the fixed air. It may likewise be conjectured that this medicine changes the quality of the urine; but its qualities and effects will be better understood, by considering it as a solvent, a stimulant, a tonic, a diuretic, a diaphoretic, and an antiseptic.

1st, THE

1st, THE Aerated Alkaline Water possesses qualities peculiar to solvents.

LIQUID solvents are those bodies which are capable of dissolving solid substances. These act upon one another by chemical attractions, or tendencies which they have to each other.

As a solvent, the Aerated Alkaline Water is capable of dissolving calculus and gouty concretions in the human body. These concretions are of a similar nature; and it is supposed that this medicine is not only capable in some degree of dissolving them, but of entirely preventing their formation.

FIXED

FIXED Air could not be taken internally, without being combined with water; and the alkaline salt could not be taken in so large a quantity with safety, without being neutralized by fixed air. —We cannot say that the chemical union of these ingredients adds anything to their original solvent powers; but by this combination a medicine is prepared, calculated to be received into the stomach with safety and advantage. We might here animadvert on the power of this medicine, compared with other solvents, and show, that though it does not possess greater, or perhaps not so great, solvent powers, as other lithontriptics, yet it has a superiority to all the medicines ever employed in this respect; and is not only
safer

safer, but is every way congenial to the health of the constitution; whereas the lixivia formerly in use are of such a caustic nature, as to injure the stomach, and occasion dangerous disorders.

WITHOUT inquiring further on this head, we refer the reader to the Experiments and Cases, afterwards particularly detailed, which prove to a demonstration, better than a thousand arguments, the power of this medicine, as a safe and efficacious solvent.

2dly, WE next consider the Aerated Alkaline Water as a stimulant.

STIMULANTS

STIMULANTS are those bodies which act upon the nervous system; and excite sensation or motion. It is difficult to explain their mode of action. We can only say, that they excite the living principle, or stimulate the nervous energy, and thereby excite to action many important organs in the animal oeconomy. There is reason to think that this medicine acts as a stimulus on the nerves of the stomach, and thereby promotes the digestive powers of that organ; that it acts upon the kidneys, and promotes their secreting power; and that by exciting the nervous energy, it quickens the circulation of the blood, and promotes the insensible perspiration. It can only,

Enlève sa force, however,

however, be considered as a gentle stimulant.

3dly, THE Aerated Alkaline Water is a tonic. Tonics are those medicines which strengthen the body.

THE human body is frequently brought into a state of relaxation, or weakness, by a variety of causes. Whatever has a tendency to diminish the nervous energy will produce this state, and the organ first affected is in general the stomach, which soon occasions a lassitude over the whole body. Whatever has a tendency to excite the nervous energy will of course counteract this state. This medicine, whether we consider it as a stimulant, or a tonic, appears

appears to have a power of increasing the tone of the nervous system, which, by the excitement it produces, gives vigour to the moving fibres. We find, from actual experience, that the use of this medicine increases the digestive powers of the stomach, and of consequence fits that organ for receiving and giving to the whole body that nourishment from food which is so absolutely necessary for its support. This medicine cannot be considered as possessing strong tonic powers, but rather as a gentle tonic, fitted for weak habits of body, when those of a more powerful nature cannot be used, from the debilitated state of the stomach.

4thly,

4thly, THE Aerated Alkaline Water may be considered as a Diuretic medicine.

DIURETICS are those medicines which increase the quantity of urine.

A PERSON who takes this medicine, to the quantity of an English pint in the day, will find that his urine is increased about 1-4th in the day. Diuretics act by their stimulating power upon the kidneys; and, by exciting these to action, may be of use in discharging from them morbid accumulations, removing obstructions in the urinary passages, and by changing the nature of the urine, may destroy its acrimony.

5thly,

5thly, THIS medicine may be considered as a Diaphoretic.

DIAPHORETICS are those medicines which promote perspiration or sweat. They are of use in discharging from the circulating fluids, any morbid or noxious matter that may be present in them. The practice of exciting by diaphoretics profuse sweat, for the relief and cure of diseases, is now very generally laid aside, as hurtful, by occasioning too great debility; gentle diaphoretics are therefore now employed, sufficient only to counteract the causes which produce a constriction on the surface of the body, and prevent the natural perspiration. This practice will

be found useful in many cases of skin

in most cases, answer the intentions of cure.

ON taking the Aerated Alkaline water, by way of experiment, I found that it occasioned an agreeable warmth over the surface of the body, and a moisture on the palms of the hands and soles of the feet. It may therefore be considered as a gentle diaphoretic medicine, well calculated for giving relief in several chronic disorders.

6thly, In the last place, we consider this medicine as a powerful Antiseptic.

ANTISEPTICS are those bodies which have a power of preventing animal substances,

substances from passing into a state of putrefaction, and of correcting putrefcency when begun.

IT is the general opinion of physicians, that our bodies have a constant tendency to putrefcency, and that it is this tendency that occasions a variety of disorders. Dr CULLEN considered the tendency to putrefcency as of two kinds, which he named the Acute and the Chronic ; the first is exemplified in febrile disorders, and the second in scurvy.

EXPERIMENTS made with the Aerated Alkaline Water out of the body, plainly shew its antiseptic powers ; and experience of its use in diseases of
the

the putrescent kind demonstrates that, in the living body, it may be employed to answer this intention with success.

THE remarks we have made on the qualities and effects of the Aerated Alkaline Water will, we hope, be sufficiently justified by the following Experiments and Cases; and we have thought it the less necessary to employ a train of physical reasoning to confirm our assertions, when by these our opinions will be fully established.

EXPERIMENTS.

E X P E R I M E N T S.

I. COMPARATIVE EXPERIMENTS of the different Solvent Powers of the Aerated Alkaline Water, Simple Aerated Water, and pure Water, on Calculus.

EXPERIMENT I.

With the Aerated Alkaline Water.

<i>Original weight of the Calculus.</i>	<i>Time immersed.</i>	<i>Diminut. of weight of the Calculus.</i>
8 Grains.	8 Days.	1 Grain.
	16 Days.	2 Grains.
	32 Days.	2½ Grains.
	42 Days.	3¼ Grains.
	50 Days.	4 Grains.

F EXPERIMENT

EXPERIMENT II.

With Simple Aerated Water.

<i>Original weight of the Calculus.</i>	<i>Time immersed.</i>	<i>Diminut. of weight of the Calculus.</i>
8 Grains.	8 Days.	Nothing.
	16 Days.	1 Grain.
	32 Days.	2 Grains.
	42 Days.	2 Grains.
	50 Days.	2 $\frac{1}{4}$ Grains.

EXPERIMENT III.

With Pure Water.

<i>Original weight of the Calculus.</i>	<i>Time immersed.</i>	<i>Diminut. of weight of the Calculus.</i>
8 Grains.	8 Days.	$\frac{1}{2}$ Grain.
	16 Days.	$\frac{1}{2}$ Grain.
	32 Days.	$\frac{2}{3}$ Grain.
	42 Days.	1 Grain.
	50 Days.	1 Grain.

II. COM-

II. COMPARATIVE EXPERIMENTS of the Solvent powers of the Urine, made with the urine of a person using the Aerated Alkaline Water, and with the urine of the same person, when not taking that medicine.

EXPERIMENT I.

With the Urine of a Person taking the Aerated Alkaline Water.

<i>Original weight of the Calculus.</i>	<i>Time immersed.</i>	<i>Diminut. of weight of the Calculus.</i>
30 Grains.	8 Days.	1 Grain.
	16 Days.	4 Grains.
	32 Days.	5 $\frac{1}{4}$ Grains.
	42 Days.	7 $\frac{1}{2}$ Grains.
	50 Days.	10 $\frac{1}{4}$ Grains.

EXPERIMENT

EXPERIMENT II.

*With the Urine of a Person not taking the
Aerated Alkaline Water.*

<i>Original weight of the Calculus.</i>	<i>Time immersed.</i>	<i>Gained in weight.</i>
30 Grains.	8 Days.	3 Grains.
	16 Days.	5 Grains.
	24 Days.	5 Grains.

N. B. THE urine, in both these Experiments, was changed twice every day. Before the Calculus was weighed, it was dried before a gentle fire. Had there been time for continuing the first experiment, there is reason to believe that the Calculus would have been entirely dissolved. After the Calculus had been immersed in
the

the urine for thirty two days, there appeared some worm-eaten like holes in it; and, between that time and forty two days, a small fragment of it was separated; and at fifty days, when the experiment was stopt, the surface of the Calculus was softened, and, on touching it, a considerable quantity of ochrey powder adhered to the fingers. The Calculus, in both experiments, was the same, of a remarkable hard consistence, and of a very close texture. It may likewise be remarked, that no incrustation took place in the phial in which the first experiment was made, but a considerable one in that of the second.

III. Ex-

III. EXPERIMENT made with a Chalkstone, or Gouty matter, in the Aerated Alkaline Water.

<i>Original weight of the Gouty Matter.</i>	<i>Time immersed.</i>	<i>Diminut. of weight of the Gouty matter.</i>
5 Grains.	8 Days.	$\frac{1}{2}$ Grain.
	14 Days.	$\frac{2}{3}$ of a Grain.
	34 Days.	1 Grain.
	42 Days.	2 Grains.
	50 Days.	$2\frac{1}{2}$ Grains.

IV. Ex-

IV. EXPERIMENT, of the Stimulating Power of the Aerated Alkaline Water, in quickening the Circulation of the Blood,

BEFORE drinking half an English pint of the water, the pulse beat 64 strokes in the minute. Five minutes after taking it, the pulse beat —68 strokes.

At 10 minutes after—72 strokes,

15 minutes after—76 strokes,

20 minutes after—72 strokes,

30 minutes after—72 strokes.

THE above Experiment was made while the person was in bed, about half an hour after he awaked in the morning. The usual state of his pulse is from 66 to 70.

V. COM-

V. COMPARATIVE EXPERIMENTS of
the Antiseptic powers of the Aerated
Alkaline Water, Simple Aerated Wa-
ter, and Pure Water.

THREE pieces of lean beef, two drams each in weight, were, on the 5th of May, 1794, severally put into six ounces of Aerated Alkaline Water, into the same quantity of Simple Aerated Water, and into the same quantity of Spring Water.

THE phials, in which these were contained, were closely corked, and placed upon the sash of a window.

ON

ON May 9th, the contents of the three phials were examined;—when that with the spring water had acquired a reddish tinge, and an offensive smell. No change was perceived in the colour or smell of the other two.

MAY 13th, The bit of beef in the phial with spring water was evidently putrid. The other two phials had acquired somewhat of a disagreeable smell. To ascertain whether the piece of beef that had been immersed in spring water, which was now putrid, could again be restored, so as to smell sweet, there was put on it 6 ounces of Aerated Alkaline Water, the spring water having been previously poured from it. A fresh quantity of the Aerated Alkaline and

G Simple

Simple Aerated Water was likewise put into the other two phials.

MAY 14th, The bit of beef, that was first immersed in spring water, and became putrid in nine days, had its smell much sweetened by being immersed for one day in the Aerated Alkaline Water.

THE phial, with the Simple Aerated Water, still smelled disagreeable; that with the Aerated Alkaline, scarcely any smell could be perceived.

EXPE-

EXPERIMENTS

On the solvent Effects of the Alkaline Solution saturated with Fixible Air.

By BENJAMIN COLBORNE, Esq; *.

A FRAGMENT of a calculus of an ochrous colour, and rough on the outside like a mulberry, weighing fifty-one grains, was put into about two ounces and a half of the mephitic alkaline solution, and corked up. After two days standing, the solution was poured off, and a fresh portion put on; and this
was

* See Dr. FALCONER's Treatise on the Efficacy of the Aqua Mephitica Alkalina, Page 110.

was repeated every day, or every other day, for thirty one days fucceffively.

AT the end of that time, the ftone was again weighed and found to have loft thirty-fix grains of its original weight.

ANOTHER fragment of the fame calculus, weighing 41 grains, treated in the fame manner, loft in thirty-feven days 32 grains.

ANOTHER fragment of the fame, weighing 54 grains, treated as above-mentioned, loft in 13 days 32 grains.

ANOTHER fragment of a calculus, of
 • a light ochrous colour, and clofe texture,

texture, weighing 41 grains, lost, by the same treatment, in 33 days, 11 grains only.

A SMOOTH white calculus was sawn into two pieces ; one of which, weighing 29 grains, was put into the alkaline solution, but imperfectly saturated with fixible air ; the other, weighing 20 grains, was put into an equal quantity of the solution perfectly saturated : After standing 28 days, the first had lost 6 grains, the other 8 grains.

ADDI-

ADDITIONAL EXPERIMENTS.

By the same.

EXPERIMENT I.

OCTOBER 16, 1786, A fragment of a hard, close-grained human calculus, weighing 55 grains, was put into a large wide-mouthed vial, and upon it was poured daily the first urine that was passed, after taking a dose of the mercurial alkaline water, by a person that was in a course of taking it every day. The vial was set in a moderately cool place, and the urine regularly changed.

From

	<i>Loss of Weight.</i>	<i>Weight of the Remainder.</i>
From Oct. 16. to Nov. 16.	2 grs.	53 grs.
From Nov. 16. to Dec. 16.	7 grs.	46 grs.
From Dec. 16. 1786, to Jan. 16. 1787.	10 grs.	36 grs.
From Jan. 16. to Feb. 16.	10 grs.	26 grs.
From Feb. 16. to March 16.	4 grs.	22 grs.
From March 1. to April 16.	4 grs.	18 grs.

EXPERIMENT II.

ANOTHER fragment of the same calculus was put into a wide-mouthed vial; and upon it was poured every day the urine of a healthy person, who never had any signs of Gravel, and who was not in the habit of taking any medicine whatever. The calculus weighed,

weighed, when the urine was first put upon it, 45 grains.

	<i>Loss of Weight.</i>	<i>Weight of the Remainder.</i>
From October 16. 1786, } to November 16. }	o	45 grs.
From November 16. to } December 16. }	o	55 grs.

ABOUT the latter end of December, the urine was neglected to be changed, and the same urine remained upon the calculus, until January 26th, in which time the fluid had become more fetid and alkaline. The calculus had during this time, fallen into three pieces, and had lost in weight 10 grains. From that time the urine was changed regularly

tic alkaline water, in the same manner as is mentioned in Experiment I. and the urine renewed daily. In the space of two months, the calculus was diminished in weight 8 grains, and in another month the whole diminution was 25 grains. The laminæ that form the calculus also began to separate; and it appeared that the action of the solvent had penetrated much deeper in one part than another.

EXPERIMENT IV.

A FRAGMENT of another very hard red calculus, which weighed 54 grains, was treated in the same manner, and for the same time, as in the last experiment.

riment. It lost in that space of time
17 grains.

OBSERVATIONS

On the Symptoms attending Persons afflicted with Calculus, and on the Effects of the Mephitic Alkaline Water.

By the Same.

URINE, in general, will change paper, stained with juice of turnsole, to a red colour, which will be permanent; but the urine which is first made, after taking the mephitic alkaline water, will change the turnsole paper to a blue colour.

colour. This will take place, even if the mephitic alkaline water be taken not more than a quarter of an hour before the discharge of the urine.

IF the mephitic alkaline water be saturated with fixible air, it will not produce any immediate change on the turnsole paper; but, after a short exposure to the air, the paper will become blue, as the superabundant quantity of fixible air flies off.

THE urine of almost every person in health, if suffered to remain for 24 hours in the chamber-pot, forms, more or less incrustation on the bottom and sides. This, however, I believe, never takes place in the urine of those
who

who are in the habit of taking daily a competent dose of the mephitic alkaline water.

PERSONS subject to the stone or gravel, ought accurately to observe the state of their chamber-pot, whether it keeps free of fur, or other adhesion to its bottom and sides; this being the principal criterion, by which the increase or amendment of the complaint can be ascertained.

IF no discolouration of the vessel appears after the urine has stood in it for some time; and particularly if the urine clears away any former adhesion, we may rest assured that the urine is of a proper kind; but if the
sides

sides of the vessel grow foul, and this foulness accumulates, it indicates a state of the urine that tends to produce or increase calculus.

Six or eight ounces by measure of the mephitic alkaline water, taken daily, will be found sufficient to keep the urine in a proper state by the generality of people; others may require double that quantity.

THE effect of the mephitic alkaline water in dissolving the incrustations formed by the urine, affords a strong presumption in favour of its dissolving power on the calculus; therefore, whoever voids any calculous fragments during the time of drinking the mephitic alkaline

alkaline water, has great reason to think that they are parts of an old concretion mouldering away, provided however a sufficient quantity of the remedy be taken to prevent any fur concreting on the chamber-pot.

As the alkaline mephitic water is so efficacious in obviating the acrimony of the urine, it seems likely to be of service, if given immediately after the operation of lithotomy has been performed, as it is well known that the healing of the wound is often much retarded by the irritation of that discharge, which is more likely to be troublesome in this way, as it is in its own nature more acrimonious.

SCHIR-

SCHIRROSITIES of the os uteri and of the prostate gland, by retarding the passage of the urine; often produce symptoms similar to those that arise from calculus. One difference, however, may be remarked, which is, that people who have such schirri, bear the motion of a carriage, or of a horse, better than is done by those who have calculus; and if they void mucus, it generally comes away with the last drops of their urine, and the pain they feel lasts in much the same degree, during the whole of the time the urine is passing, which is seldom the case in calculous complaints; as the pain in them is generally most acute, just as the last drops are discharging.

PEOPLE

PEOPLE who have ulcers in the urethra, attended with stricture, generally void purulent matter previous to the coming away of the urine, which last, by being long retained, sometimes causes abscesses in the perinæum and suppressions of urine.

I HAVE known persons, of both sexes, advanced in life, complain for many years, of frequent urgings to make water, which comes away by little at a time, and is generally of a wheyish appearance, and after standing twenty-four hours, deposits a large mucous sediment. Sometimes a suppression takes place. In all the cases of this kind, in which the mephitic alkaline water was tried, more or less relief was found, one

I

only

only excepted, which on examination proved to be a schirrus of the os uteri.

IN violent paroxysms of the stone or strangury, I have advised the use of opiates combined with the mephitic alkaline water. Fifteen or twenty drops of the thebaic tincture may be taken in a quarter of a pint of the water, and occasionally repeated. A bag of oats heated in boiling water, I have experienced to be a convenient and safe method of applying a fomentation to the os pubis, and what generally gives ease. A clyster also of two ounces of olive oil, and forty drops of the thebaic tincture, may be injected, and retained for several hours. If nevertheless the mephitic alkaline water should prove too stimulant

stimulant to be repeated during the fit, which seldom happens, barley-water, with gum arabic, may be substituted in its place; and when the pain has subsided, recourse may again be had to the mephitic alkaline water.

DISEASES

D I S E A S E S,

FOR WHICH THE

AERATED ALKALINE WATER

MAY BE USED.

FROM the qualities we have ascribed to the Aerated Alkaline Water, and from the result of the experiments we have made with this medicine, we are in some measure prepared to recommend the use of it for the relief and cure of several diseases,

OUR

OUR limited plan forbids us to enter upon a full discussion of each of the disorders. We shall, however, give some short account of them, under the following heads: *Gravel*,—*Gout*,—*Stomachic*, and *Putrid Disorders*.

I. GRAVELISH DISORDERS.

THE Stone, or Gravel, is one of the most painful disorders to which mankind is subject. All constitutions form gravel in the body more or less. The urine of every person, even of children, contains it. It is difficult to assign a reason, why the urine of one person is capable of holding this matter in a state of entire solution, and not
that

that of another. It is supposed to arise, from a greater quantity of it being present in the constitution than what the urine can dissolve ; and this superabundant quantity, so far as we can judge, is in general owing to original constitution. It is difficult to say what are the causes which induce a disposition of the body to form gravel. It has been generally thought, that they arise from a sedentary life, a large use of animal food, wines, and hard waters.

THE Experiments made by Dr. WILSON seem to prove, that vegetable has a greater tendency to produce gravel in the body than animal food. This, however,

however, we think, requires further confirmation.

WITH regard to hard waters having a tendency to predispose to gravel, this has been confidently denied by some, and asserted by others. From a careful examination of the arguments on both sides of the question, we are rather inclined to think that they may.

GRAVELISH concretions are in general, first formed in the kidneys, and when passing from them into the bladder, occasion inflammation and great pain, which is commonly called a fit of the gravel.

THE

THE inflammation and pain will be in proportion to the size of the stony particles; these particles, when got into the bladder increase in size, unless discharged along with the urine. When a stone is formed in the bladder, it will continue to increase in size, by fresh accumulations, which are daily deposited from the urine on its surface. A stone, by its weight, motion, and the roughness of its surface, will greatly injure the coats of the bladder; and unless it be extracted in time, or its bulk prevented from increasing, and its surface smoothed by proper solvents, will occasion the death of the unhappy sufferer.

K
THE

THE signs of gravel are, pain in the loins, a sensation of coldness over the surface of the body, particularly over the lower part of the belly and loins,—sickness,—vomiting,—the urine sometimes of a brownish thick appearance, at other times transparent, depositing red sand or gravel,—suppression of urine,—bloody urine, &c.

IN order to cure gravelish disorders, it is necessary to remove the inflammation and the spasm, to discharge the calculous concretions, and to strengthen the system.

THE inflammation is most effectually removed by bleeding; the spasm, by opiates; the solution or discharge of the calculus, by the Aerated Alkaline Water.

ter. And to give vigour and strength to the body, exercise and tonic medicines will be necessary.

If the person be of a strong robust constitution, it will be necessary to take three or four tea cupfuls of blood away at once; but if of a delicate habit of body, one or two will perhaps be sufficient.

LARGE doses of laudanum, in very painful cases, will be necessary to overcome the spasm; but they should be discontinued as soon as that end is answered.

THE Aerated Alkaline Water, from its solvent and other qualities, is well
calculated

calculated for discharging the calculus from the kidneys and bladder, and for preventing fresh accumulations. There is good reason to believe that this medicine is capable of dissolving calculus in the body; but, whatever may be its power in this way, we are certain of one fact, namely, that it prevents fresh accumulations. It is supposed to do this, either by changing the quality of the urine, so as to render it capable of holding the matter which constitutes gravel, in a state of entire solution; or, by its sudorific quality, discharging that matter from the circulating fluids, by the insensible perspiration. This fact is well deserving the attention of persons subject to the gravel, and should induce

induce them to use this medicine during the remainder of their lives.

So insensible are most people to the blessing of health, that until deprived of it, they seldom properly estimate its value; and as soon as their complaints are removed, they think it unnecessary to continue a remedy as a preventative: but in this disease, if they do not, they may be assured that the disorder will soon return.

AFTER having overcome the violence of the disease, we have said that it will be necessary to strengthen the system, by exercise, and tonic medicines.

EXERCISE

EXERCISE in the open air is so well known to have the effect of invigorating the body, that there is no necessity for bestowing a single argument in its recommendation.

WE have already considered the Aerated Alkaline Water as a gentle tonic, and as such would recommend it in this disease. When the stomach will admit of stronger tonics, we think it advisable to use them with this medicine, particularly *Uva ursi* and the Peruvian bark. Both are astringent as well as tonic medicines. These should be used, especially for some time after a fit of the gravel, as above described. To prevent a return of the disease, a smaller quantity of the Aerated Alkaline

line

line Water will be sufficient. A gill taken twice a day will answer this purpose. This may be applied to persons, who have undergone the painful operation of lithotomy; and with confidence we can recommend it as a certain preventative. The experience of persons, who have for many years constantly taken this medicine, induces us to conclude, that, if properly prepared, it will never do any harm, though it be used for a lifetime.

II. GOUT.

THIS disease has such affinity to the Gravel, as to be very generally conjoined with it; and the same remedies
which

which are good for the one, experience has shewn to be useful in the other. This disease, then, is one for which the Aerated Alkaline Water may be used with advantage.

GOUT is in general an hereditary disease. The exciting causes are supposed to be the same with those of the Gravel; to which may be added the application of cold, particularly in a wet form, and whatever has a tendency to debilitate the body.

GOUT seldom attacks people in this country before the age of thirty six or forty years; but we were lately informed that, in some parts of England, the disease occurs among young people,
owing,

owing, as is supposed, to a particular fermented liquor, called White Ale, which the common people in these places, are in the habit of using.

GOUT attacks various parts of the body,—the head, stomach, kidneys, joints, &c. When it attacks the joints, it is called a regular gout; when other parts of the body are affected with it, a misplaced gout.

ITS attacks are sudden, and frequently without any warning. When it seizes the joints, however, the following symptoms are commonly to be observed: The natural sweat of the feet is impaired; this is succeeded by a sense of coldness, prickling, and numbness.

L Languor

Languor speedily supervenes, with loss of appetite, sickness, shivering, succeeded by heat and feverishness. These are soon followed by swelling, inflammation, and great pain, in the joint attacked.

THE violence of the pain seldom lasts above twenty-four hours, and often not so long. Many persons, after having had frequent fits of gout, have concretions of a chalky appearance formed upon the joints affected.

THESE concretions are of the same nature with calculus; but contain a great deal more calcareous earth.

THE

THE Gout is one of those diseases, which have been considered as incurable; though, at the same time, its violence may, by proper cautions and remedies, be lessened.

By removing the causes, which are supposed to excite fits of the Gout, the disease may be palliated. Exercise, bodily labour, abstinence from vinous and spirituous liquors, avoiding cold and wet feet, may be considered as opposed to the exciting causes.

DR. CULLEN was of opinion, that little could be done by medicine for curing the Gout, but that a great deal might be expected from regimen; and was persuaded, that any person, who ear-

ly

ly in life, should enter upon the constant practice of bodily labour, and abstinence from animal food, would be entirely preserved from this disease.

EXERCISE, and bodily labour, by promoting the insensible perspiration, may certainly be of use. They should never be violent or fatiguing, but in proportion to the strength of the body; more moderate in advanced than in the earlier periods of life.

A SUDDEN or total change from animal to vegetable food, is rather a dangerous experiment; and it will be prudent not to give over the use of wine suddenly, if the patient has been habituated to take it.

EXPERIENCE

EXPERIENCE is still wanting, to confirm the utility of the Aerated Alkaline Water, in this disease, though in some cases it has been deemed beneficial.

FROM the affinity which this disease has with the Gravel, and from the experience of the good effects of this medicine, in this disease, we may conclude that in the gout it will also be found useful.

WE were lately informed, that a gentleman, who was for several years afflicted with the Gout in his feet, used the Simple Aerated Water, and experienced a complete cure. He supposed that the medicine acted as a diaphoretic, as it restored to his feet the
natural

natural perspiration, which had for a long time been obstructed. If the Simple Aerated Water acted in this way, and produced a cure, is not the Aerated Alkaline Water better fitted for the purpose? It is certainly a more powerful solvent and a diaphoretic*.

III. STOMACHIC COMPLAINTS.

THESE arise from such a variety of causes, are so connected with other diseases, and so complicated in their nature, that it is impossible for us to give any complete view of the subject, consistent with our limited plan; let it therefore

* See Case No. 1. and Experiment, P. 55.

therefore suffice to give a few remarks, under the general head of a *Depraved Digestion*.

THIS distemper is often to be attributed to hereditary diseases; but is likewise frequently brought on by those causes which have a tendency to weaken the body, particularly such as hurt the digestive powers of the stomach. Among these we may reckon an immoderate use of spirituous liquors; large doses of opium; the too frequent practice of taking vomits and strong purgatives; acid and unripe fruits; the large use of tobacco, and strong tea, particularly when taken too warm. To these may be added an indolent and sedentary life.

THE

THE cure will consist in removing the causes, and in restoring the natural tone and strength of the stomach.

PERUVIAN bark, Columba root, Angustura bark, and chalybeates, are in daily use for removing stomachic complaints, and are no doubt, with proper management, often of great use; but there are certain states of weakness of the stomach, owing to the above causes, or arising from other diseases, particularly from bilious disorders, wherein these remedies are altogether ineffectual, chiefly originating from the weakened state of the digestive powers of the stomach, which makes that organ unfit for receiving or dissolving those medicines. Very
gentle

gentle tonics, therefore, are the remedies calculated for this state of debility. From the gentle tonic, antacid, and stimulant powers of the Aerated Alkaline Water, it appears to be a medicine well fitted for the purpose. We do not state this from conjecture, but from actual experience of the happy effects of this medicine in such debilitated states of the stomach.

IV. PUTRID DISORDERS.

THE nature, causes, means of prevention, and cure of putrid diseases, have engaged the attention of philosophers and physicians in all ages.

M... THE

THE effluvia emitted from putrid vegetable and animal matters impregnating the atmosphere, being received into the lungs, and from thence communicated to the circulating fluids, have been long considered as the most common cause of putrid diseases.

AN ingenious author has lately thrown new light upon this subject, and has ascribed the cause of putrid diseases, to the want or deficiency of that part of the common atmosphere, called Vital Air, or Oxygen. But, without attempting to examine Dr. BEDDOES's theory, we shall go on to remark, that the living animal has a constant tendency to a putrescent state, independent of these foreign causes, and would

2

uniformly

uniformly run into that state, unless constantly supplied with antiseptics.

IT is well known, that our food, composed of fresh animal and vegetable substances, contains fixed air, which gives to the body that constant supply of an antiseptic, so absolutely necessary: to the want or deficiency of this, in the food of seamen, may be justly attributed the putrid diseases with which they are attacked, particularly the scurvy. As an evidence of the truth of this opinion, it may be stated, that, in general, the scurvy of seamen will be cured by a supply of fresh vegetable and animal food.

THE

THE Aerated Alkaline Water, from its antiseptic quality, is well calculated for speedily and successfully counteracting putrescent disorders.

WITH deference to the opinions of DOCTORS PERCIVAL, WITHERING, and DOBSON, we think the practice they recommend, of breathing fixed air, is by no means adviseable. It is well known that the breathing of fixed air is destructive of animal life; and though its exhibition in this form may counteract putrescent symptoms, yet, if not cautiously managed indeed, it must do hurt.

THE antiseptic quality of fixed air, may be expected under the form of the Aerated Alkaline Water.

THIS

THIS medicine, as a powerful anti-septic, claims particular attention, and as such it may be used in putrid fevers, putrid sore throat, confluent small pox, foul ulcers, consumption of the lungs, scurvy, &c.

To give an account of each of these putrid disorders would carry us beyond the bounds prescribed for this treatise. But, before closing our remarks on the diseases for which we have recommended the Aerated Alkaline Water, we should beg leave to suggest that, in our opinion, this medicine would be found of use in the Scrophula, and should earnestly wish that medical practitioners would make a trial of it in this disease.

WE

WE hope that future experience will more amply prove the truth of our assertions, confirm our conclusions, and throw more light upon so interesting a subject.

CASES.

C A S E S.

No. I.

Feb. 5th, 1794.

CHARLES DALRYMPLE, Esq. began about fifteen years ago, to be afflicted with gravelish complaints, which continued to increase during the succeeding eleven years. He passed each year four or five small stones, about the size
of

of the feed of a Seville orange, which rendered his situation most distressing. Honey, as a remedy, was recommended to him, which he used constantly for two years, to the quantity of fifteen Scots pints, each year, but without experiencing the least benefit. He also used with the same ill success, a variety of other remedies.

ABOUT four years ago he consulted Mr BENJAMIN BELL, surgeon in Edinburgh, who recommended to him the Aerated Alkaline Water, which he began immediately to take, to the quantity of half an English pint twice in the day. Soon after, he experienced great benefit, and has ever since been entirely free of all gravelish complaints, except
when

when he discontinued taking the water. This he did last summer, by way of experiment, and he then had a return of his disorder, and passed several small stones without any pain. Having had recourse to his medicine, he was again soon restored to health.

BESIDES experiencing a complete cure, he has reason to believe that the water has been of singular service to him in other respects. When about forty years of age, he was attacked with the Gout; and has ever since, at times, been more or less afflicted with it. But from the time he began to use the water, the fits of gout have been less frequent; and when they did return, were by no means so severe as formerly.

ly. He has had none for these twelve months past, which he attributes entirely to the use of the Aerated Alkaline Water.

DURING the continuance of these complaints, he never altered his manner of life. He lives freely; and is now in perfect health.

WHEN I applied to Mr. DALRYMPLE for his case, he most readily consented to give it, and to allow it to be published. The above account he dictated himself; and it may be depended upon as authentic.

No. II.

THE two following Letters, from Sir
ALEXANDER LIVINGSTONE, contain
an important case of the Stone.

SIR, *West Quarter House, Feb. 15. 1794.*

I AM favoured with your letter,
wishing to know the effects of the Aera-
ted Alkaline Water on me, and to al-
low my name to a new treatise you
mean to publish.

As I have received great benefit
from the use of that Water, I consent
to

to your using my name; and you have as follows what happened to me for these twelve years.

IN 1781, then about forty years of age, and in an active military line, I was suddenly seized with a strangury. When the urine came, it was mixed with blood. This disorder prevented me from taking exercise on horseback; a carriage was very disagreeable; and I walked with pain. It was not till 1783 that a friend suggested I had a stone. I was then sounded, and a stone found in the bladder. Though I then intended to be cut, it was not till Sept. 1785 the operation was done, and I had a happy recovery.

FROM

FROM the time I was founded till cut, I took twenty five guinea bottles of Adams's solvent, which certainly eased my pain at times. I passed much sand; but the weight at the neck of the bladder increasing, almost deprived me of taking any kind of exercise. The operation succeeded; and a stone upwards of three ounces was taken away. I continued free from pain upwards of ten years, when I found some very disagreeable returns of pain in those parts, particularly after hard exercise, which I often took on horseback and on foot. I suspected a return of the stone, was again founded, and a stone found in the bladder. I then intended to submit a second time to the operation; but a friend at Bath having,

in conversation with BENJAMIN COLBURN, Esq. recommended my reading, and sent me, a pamphlet on the Alkaline Water, by Dr. FALCONER. The many cases there stated, and the happy effects of that Water on Mr. COLBURN himself, and many others, determined me to give it a trial; and I have, from that time till now, taken an English pint of the Water every day; from the use of which I have been enabled to take moderate exercise, without pain, passing my water freely, and seldom any bloody urine, except when I improperly leaped over or down a fence.

I BEGAN to take the water in June 1792. It has agreed perfectly well with me, and my health is better than
before

before I began to take it. I mean to continue to take it, being convinced that it is from that water I feel so easy, and enjoy so good health; but if my pains return, I shall not hesitate to undergo another operation, and afterwards to take the water constantly,

I am,

Sir,

Your most obt. servt.

A. LIVINGSTON.

To Mr. John Moncreiff.

SIR,

West Quarter House, 12th March, 1794.

I HAVE your favour, with the medicines ordered.

IN about two months after I began to take the Aerated Alkaline water, I was able to bear the jolting of a carriage, without passing bloody urine, or much pain; and have continued better, so that I can ride on horseback twenty miles, without inconvenience, except alighting sometimes to make water, but no blood follows.

THE water is most agreeable to my stomach; and I shall continue to take it, as I believe that it is from its good effects

effects that I feel so easy, and hope that it will be tried by all in my situation.

I am,

Sir,

Your most obt. servt.

A. LIVINGSTONE.

To Mr. John Moncreiff,

FROM the above case, it appears that Sir ALEXANDER LIVINGSTONE has received great benefit from the Aerated Alkaline Water. It is probable, that this medicine has had the effect of in part dissolving the stone in his bladder, or at least has smoothed its surface, and thereby prevented it from injuring

ing the bladder, and occasioning pain and bloody urine. One thing seems to be perfectly certain, that no fresh accumulation has taken place, since he began to take the water. It appears, likewise that Adams's solvent, taken in considerable quantities, had no other effect, than to give some temporary ease, and that it did not prevent the growth of the stone*.

To be delivered from excruciating pain,—to have health restored,—to be able to take exercise, and enjoy the company of friends,—are the benefits here

* Dr ROTHERAM informed the Author, that ADAMS's Solvent is a composition of nitre and opium.

here received ; which none can rightly estimate, but those who have been taught by experience, the transition from the sorrows of disease to the happiness of restored health.

No. III.

SIR,

West Quarter House, Feb. 28th 1794.

WHEN I informed you, in my letter of the 15th instant, of the good effects of the Alkaline Water on myself, I did not think of the following case.

THE subject of it was a son of JAMES FINLAYSON, a weaver in Falkirk, whose wife, about ten years since,

since, nursed a child of mine, and who occasionally came to my house.—She often mentioned the distressed situation of her son William, now about six years of age. On particular inquiry, I found that the child, from ten weeks old, had been distressed by a stoppage of urine; that application had been made to the surgeons in Falkirk, without obtaining relief for him, except when she gave him laudanum.

SHE said, when he was three years old, he was often in great distress, screaming from six o'clock in the evening to four in the morning, passing drops of blood; and could get no rest, until he was quite exhausted, or had got a dose of laudanum.

Finding

FINDING so much relief from the Alkaline Water myself, I gave her a bottle of it, and desired her to give her son a wine glassful of the water every morning,—which was done; and in four weeks the pain subsided, so that the child slept tolerably easy; and in a month more was so well, as to be able to go to school. His water is now passed freely, without any blood, and he seldom feels any pain. He continues to take the water. It is now about fifteen months since he began to use it,—a sure instance of its good effects in both cases, which I can attest.

I am,

Sir,

Your most obt. servt.

A. LIVINGSTONE.

To Mr. John Moncreiff.

No.

No. IV.

I am authorised, by the Rev. Dr. BLAIR,
to publish the following paragraph,
contained in his letter to me of the
3d Feb. 1794.

“DR. BLAIR having been for some
time troubled with disorders of the
gravelish kind, was advised, by Dr.
BLACK, to use the Aerated Alkaline
Water. After having used it for some
months, he found himself relieved,
and has now for several years conti-
nued entirely free from any disorders of
that nature. But conceiving that wa-
ter to have a good effect on his general
health,

health, he still continues to take every day, about two-thirds of a Scots mutchkin, which is furnished him by Mr. Moncreiff."

No. V.

EXTRACT OF A LETTER FROM THE
REV. DR. SHAW.

SIR,

Coyltoun, Feb. 8th, 1794.

I AM favoured with your letter, of the 1st current, in which you desire me to give you an account of the manner in which I have been affected with gravelish complaints, and what effects the Aerated Alkaline Water has had since I began to use it. With pleasure I give what information I can as to these particulars.

In

In the years 1789 and 1790, but never before, I passed four stones, the largest of which was about the size of a field pea. I had no pain, except when passing them. In August, 1790, after being in a carriage, I passed a considerable quantity of blood with my water, which I did frequently the winter and spring following. During all that time, I felt very great pain at the neck of the bladder, but never at any time in my back and loins.

IN May, 1790, I sent for the Alkaline Water from you; but soon after, I purchased a machine, as it was inconvenient to get the water from Edinburgh; and prepared it myself.

For

FOR several months, I was not sensible of any benefit from the water, though I took it regularly, which I still do, a mutchkin of it at three times. In ten months, my intervals of ease were greater; and when the pain returned, it was not quite so violent; so that last summer, and this winter, I have been much easier; though after riding, which I seldom do, or being in a carriage, my water is tinged with blood, and the pain pretty acute.

BEFORE I took the water, I was founded, but no stone was felt; however, I am told there may be one, or more, which may escape that operation.

I PUT one of the stones I passed into a vial, with Alkaline water. After some weeks, I took it out of the vial; and, upon touching it with my fingers, it crumbled, and felt like clay dissolved in water. From this, I imagine that the Alkaline water may dissolve some stones; and if it should not always have that effect, I hope it prevents the accumulation of that matter which is called a stone. If so, every person, who has a tendency to gravelish complaints, should, upon the first symptom, use the water.

I GENERALLY took a good deal of exercise; and when, from bad weather, I kept my house, I had little appetite or digestion, and no relish for meat;
but

but though I have taken less exercise than ever for some years, yet since I used the Alkaline water, I never had a better appetite, or digestion, and never enjoyed better health.

I am,

Sir,

Your most obt. servt.

DAVID SHAW.

To Mr. John Moncreiff.

SIR, *Coylton, May 16th, 1794.*

I AM favoured with yours of the 14th current, in which you desire me to allow you to publish my name alongst with my case I lately sent you. Though I wrote it in a hurry, and therefore

therefore suspect it is not very accurate; I have no objection, if you think it can be of any service in recommending the use of the Alkaline Aerated Water. I impute the ease I have enjoyed these last nine months to it; and though I have had some returns of my complaint, these have not been so frequent, and the pain very moderate, in comparison of what it was for three preceding years. I can now go in a chaise without any inconveniency, which was by no means the case for several years. In every other respect, I enjoy exceeding good health. I think it is probable the water, when properly prepared, and taken regularly, dissolves some kind of stones, and prevents the accumulation of that matter of which stones are composed

posed. If the water is taken when the first symptoms of the disorder are felt, I am persuaded it would be of great service. I most sincerely wish success to your publication upon a subject so interesting ; and am, with regard,

Sir,

Your most obt. servt.

DAVID SHAW.

THE above two letters from the Rev. Dr. SHAW afford an instance of the good effects of Aerated Alkaline Water on the appetite, digestion, and general health; and though the water seems to have required longer time in relieving his gravelish complaints than

is

is usual, yet he still may expect greater benefit by continuing to take it.

No. VI.

EXTRACT OF A LETTER FROM MR.
PEEBLES.

Edinburgh, Orphan Hospital, March 25th, 1794.

SIR,

IN answer to your request, I send you the following narration, respecting my complaints.

A number of years ago I began to feel a difficulty in passing water. Some-time after this complaint began, I passed with my urine considerable quantities of sand.

I WAS advised to take Castile soap, which I did, and thought myself somewhat relieved by it, yet notwithstanding, I had frequent returns of my disorder, and it became more severe, so that I often passed blood with my urine, especially after walking but a short way, if performed hastily. During this time I suffered great pain, and had a most unaccountable coldness over the lower part of my belly, back, and loins, which I felt even in the warmest summer day.

ABOUT two years ago, I had a severe fit of the gravel. At that time you called to see me; and both you and Mr. KERR, then surgeon to the hospital, insisted with me to take the Aerated Alkaline Water. I consented to try it; and you
sent

sent me some of the water, which I began to use, by your directions. Soon after, I felt more ease in passing my water, than I had done for a long time before. I have continued to take the water ever since, and have never had another fit of the gravel, and the coldness is entirely gone.

ABOUT two weeks ago, I passed two small pieces of a stone, resembling nutshells, which I imagine were separated from one in my bladder. This I attribute to the effects of the water; and I hope, by my continuing to take it, it may in time bring away what remains. The water agrees perfectly well with my stomach, and never has impaired my appetite.

THOUGH

THOUGH I cannot now recollect all the particulars you might wish to know, yet I hope the above general account will be sufficient for the purpose of recommending the use of that water to those in similar circumstances with me.

I am,

Sir,

Your very humble servt.

WM. PEEBLES.

To Mr. John Moncreiff.

Q. No.

No. VII.

EXTRACT OF A LETTER FROM THE
REV. MR. JOHN ROBERTSON.

SIR,

Kilmarnock, May 7th, 1794.

I HAVE received your two letters ; and am forry that I have been so long prevented from returning you an answer. but that which has prevented me from doing so, will evince, I think, the good effects of the continued use of the Aerated Alkaline Water, in the Stone or Gravel, more fully than all I could before have said on the subject. The fact is, that, about the time when I wrote Mr. RUSSEL's card, the calculus began

began to crumble down ; and, as it is of a very hard and flinty substance, some of the bits broken off, being rough, and the corners sharp and pointed, with great difficulty made their way through the passage, and tore it so much about the neck of the bladder, as to occasion for a good while a considerable loss of blood ; so that I durst not, in that situation, confine myself to the posture of writing, so long as the account I meant to have sent you required ; and as this still continues in some degree, I must confine what I have to say as much as possible ; but, in the short account I shall give you, I shall not neglect any thing that seems of importance,

ance, so far as I can now remember particular facts or circumstances.

ON the last day of December 1785, I was seized with a flow fever, which continued 21 days before the crisis took place. A week or two after this, I was seized with a very sharp rose fever; and the rose, which began in my left ear, and came at last to a suppuration there, went gradually over my whole head, and swelled it so much that I saw none for several days. About eight or ten days after this went off, I had a relapse; and the rose began where it had done before, but now descended down the length of my shoulders. In about the same time as before, after this went off, I was seized with it a
third

third time; and, observing the same progress, the rose now descended to my loins, leaving only about the breadth of my palm on my breast free, and a small stripe down the back bone. When I had providentially weathered all these, and continued some considerable time getting better, I chose a fine warm day, and with some assistance took a turn in my garden; but finding myself much fatigued, I sat down, dreading no harm, and rested about ten minutes on a summer-seat. Here, though the day was warm and fine, in my emaciated state, I had undoubtedly caught a little cold. By the time I got in, I felt a pain at the ball of one of my great toes; and upon looking to it, found it considerably swelled and inflamed.

This

This increased considerably for eight or ten days; and it was not doubted but it was the beginning of a goutish disorder: but it soon terminated in a rheumatic fever. The whole of my feet and legs became greatly swollen; my feet to such a degree, that it was for a long while dreaded that the skin of them would have burst. From the beginning, I was confined to my bed, and could only ly on my back; and as I continued in this confined situation for near two months, and in that emaciated state in which I was, when seized with this last fever, I lost a good deal of the skin on some parts of my back, never being able to turn to either side for the smallest relief. The torture I underwent by the least motion, both from
this

this last cause, and from the rheumatic spasms, that were ever and anon taking place, was inexpressible, and was not even exceeded by the severest paroxysms of the stone afterwards. During all this time, I could only pass my urine in the position in which I lay, and as it never was or could be fully thrown off at any one time in that position, I imagined it was then that a calculus was formed in the bladder; for soon after I begun to get better, I found always a small degree of heat at the neck of the bladder, at the time of passing urine; and it took some time before it could begin to make its way. This rather gradually increased, but not so as to be troublesome. At last, in the spring following (1787), I observed my urine
once

once or twice a little tinged with blood; and having one day gone from home a few miles in a chaise, which had to drive along a very rough road, I was surpris'd, on coming home, that I pass'd a great deal of blood, but without the smallest pain at the time, though I had felt a little uneasy on the road. It went off next day; but always after that, upon my walking to any distance, or after any false step made, I still pass'd blood, so that I was oblig'd to walk with the utmost care and circumspection. Thinking it might tend to strengthen me (for I was still very weak) I had determin'd to go and bathe in the salt water this summer, and accordingly went about the beginning of July. As I had about thirty miles
to

to go to the place intended, I was afraid lest it might have increased my tendency to lose blood by urine ; but luckily as the road was mostly very good, I made out the journey in one day with the loss of very little, and continued bathing regularly for two months. During this time, I found myself gradually recover more strength ; but still, as before, now and then lost some blood when passing my urine ; and the feeling of heat at the time became gradually greater. I had never hitherto suspected the gravel or a stone ; but only imagined that my constitution being weakened by the long and severe distress I had had, the parts about the neck of the bladder had probably suffered most. But, as I found that, though I was otherwise getting more strength

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now,

now, yet I continued still to lose blood, and this seemed rather to be increasing both in quantity and frequency, I began to be a little alarmed about it, and consulted a gentleman of established good character, and long experience in the physical line; and he suggested to me first, that it might probably be a stone in the bladder; and, at the same time, he gave me some of the Alkaline Aerated Water to make a trial of it. I took it for a few days, but found in that time no difference in my situation. I then was obliged to return home, and made out my journey as well as at first; and having brought some of the water with me, I took it for day or two. It was now that I was alarmed in the most effectual-manner: Uncertain as yet what my disorder

disorder was, whether a stone, or some weakness contracted in the prostate gland and the parts adjacent, by my long and severe illness, and consequently not knowing what to apply for relief, I was in a few days all at once seized with an amazing loss of blood. Making every allowance for the urine that was mixed with it, I could not think, for ten or fifteen days, that I lost less than a Scotch mutchkin per day, and some days double that quantity, if not more; and that whether I moved or not. Indeed I had no hopes, but that it would in a few days finish my life. I was soon reduced to be unable to walk from my bed to the fire side without assistance; and even with it, I once and again fainted from weakness ere it could
be

be done. Yet, all this time, to my great astonishment, I did not feel the least pain in the parts from whence the blood proceeded, so as to be able to ascertain whether it came from the kidneys or from the bladder. At last, about the end of fourteen days, so far as I now remember, the discharge of blood gradually abated and wore off. Though I had used every thing that could be thought of, none of them seemed to be of the smallest service, till I imagined there was little blood left in my body. The weakness to which it had reduced me, and the small quantity of blood that could now remain, or at least the inferior quality it behoved to be possessed of, made me seriously afraid of a consumption ; yet, by degrees, and by using nourishing

nourishing victuals, I begun again gradually to recover strength, still losing however at times some little blood as formerly. But I now began to find the loss of it accompanied with excruciating pain; and upon using means to free the urine from the blood, I was able sometimes to collect as much fine sand from one pot as might nearly lie on a sixpence. I supposed it was this passing over the wound that had been made, when I lost so much blood, that occasioned the pain. Being now in some degree ascertained of a gravelish disorder, if not of a stone, I was induced by strong recommendations to try ADAMS'S Solvent. I did not like to return to the Alkaline water, as I had some apprehensions that it had been partly the
cause

cause of that excessive loss of blood which I had sustained. Before I used any of the Solvent, I had begun to have regular paroxysms, once a month or six weeks, attended with the usual concomitants, particularly the strangury, which was sometimes so violent that I was obliged to have recourse to the warm bath, or what I found at last answered the purpose still more effectually, which was now and then through the day, and particularly when going to bed, to drink at once about a mutchkin of plain water, made as hot as I could drink it. This never failed to afford me in a little time more or less relief. I used eight or ten bottles of the solvent; but after the first bottle, which I thought was of considerable

able

able service to me, I never found the smallest relief from it. Mr. PERRY, who at that time sold it, I think now, accounted for this very justly. He told me, in my correspondence with him, that though he believed I had had a stone of long standing, yet, if there was any blood in the composition of it, the solvent could not affect it; and I have of late found that there is a great deal of blood in the composition of the one I have. My paroxysms becoming at last very frequent, and almost intolerable by the torture they gave me, and thinking that the caustic remedies sometimes used behoved soon to finish me, as I was still weak and feeble, and had never fully recovered the shock I sustained by the loss of so much blood, I resolved,

ed, as a last attempt for my health, to make one other trial of the Alkaline Water, though I did it almost in the persuasion that it might occasion such another effusion of blood as I had before, and which I was sure I could not then stand. I sent for some time to the same gentleman I had got it from; but as I could not be well and regularly supplied with it from him, I at last got a machine to make it for myself, which my good friend Mr. CREECH was so kind as to send me. At first I began with great caution, and for some weeks did not take above a wine glassful or two in the day; and at the times I was losing any blood, I abstained a day or two from it altogether; it was near half a year, to the
best

best of my remembrance, before I durst bring myself to use the full quantity per day, which I now take, and have done for some years past; which is a Scots mutchkin. I had not taken this quantity very long, till I found it begin to have a happy effect. My paroxysms became more seldom, and not so severe. I think I had only two or three that were any thing severe after this. But in about six or eight months they were become so easy, that I just knew the time of them, by feeling a little of the strangury that used to attend them, and by being oftener than usual obliged to make urine. It is now two full years since I have been so far free from paroxysms and pain; but as I still know, as I have mentioned, the time of a paroxysm,

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roxyfin, I am persuaded if I was to give up the use of the water, I would soon be as bad as ever;—and considering the ease and relief which it affords in this dreadful disorder, I think the world is more indebted to the goodness of Providence for the discovery that has been made of it, than perhaps for any other discovery that has ever been made in the physical line.

I SHALL only further mention a few facts, to ascertain, in my case, the certainty of its possessing a solvent power in some degree, as well as its efficacy in giving relief from pain. I mentioned before that, when losing blood with great pain, I had been able to separate from the blood and urine, at different times,

times, a considerable quantity of fine sand, which ascertained that my disorder was gravelish; but I had been all along prevented from being founded, lest that might have hurt or increased the wound from which so much blood had issued. After having been above twelve months in perfect ease, and without losing any blood, I, about the end of July last year, ventured two or three miles in a chaise for the first time. A day or two after that I passed a triangular stone, about one fourth of an inch at the base in length. It gave me not the least pain; for it was as polished as a piece of china. In this, I observed that a great part of the composition was blood. A number of small strata appeared in it; one of which I supposed

supposed it might have acquired at each time that I was losing blood. I tried a chaise once more during the course of the summer; but it had no farther effect. All this last winter I had been very well; but during a few cold days we had in the beginning of the spring, I was all at once surpris'd in the morning to find I had pass'd a good deal of blood, as at the first, without any pain. I own I now began to give less credit to the Alkaline water than what I had for a long time done, and was afraid such another scene was awaiting me as what had happened at first. I confin'd myself to a smaller quantity of the water than usual for some days, during which I continued to lose blood, but not in a great quantity. At last,
about

about five days after it had begun, having not had the least pain all this time, I felt a stone fairly enter the urethra, which gave me violent pain. It gradually wrought its way, bit and bit, for two days, before I got quit of it. It was not half the bulk of the former one, and was evidently broke off from a larger mass, smooth on one side, and rough, jagged, and prickly, on the other, which had occasioned the difficulty of the passage and the pain. In about twelve hours, I lost no more blood, nor have done since; though still smaller bits are almost every day since coming away, and some of them occasioning a little pain, but no blood, during their passage. Now this last seems fully to evince that the stone is
yielding

yielding by degrees to the power of the Alkaline water ; for I use no other thing by way of remedy. All the different bits I have passed are as hard as flint ; and a great part of the composition of every one of them is blood. Perhaps where the stone is united only by mucus, and softer, the solution may be much quicker than in mine ; for blood, I believe, is a very strong cement, which Mr. PERRY thought ADAMS's solvent could not at all effect ; and perhaps the Alkaline water only affects it, by dissolving the mucus that is in the stone, opening of consequence the pores of it, and thus exposing it more fully to the action of the urine that is often passing over it : but one thing seems to be pretty certain, that
it

it is not very long before it renders the stone smooth on the surface, and thus gives ease to the patient. I think this last circumstance, of the stone's occasioning me the loss of blood for five or six days before it came away, and that without pain, and the blood's immediately ceasing after it came away, leaves now little doubt, that the great effusion of blood, which I had, must have been owing to a much larger stone affecting and tearing a larger surface of the bladder, though till now I could never think that could have been the case, without some degree of pain; but it would appear from hence, that the bladder is not itself susceptible of much pain, though pretty severely wounded, as mine must have been.

I SHALL now only add one or two observations, which I make from my own experience. The first is, that the more fully the water is impregnated with the fixed air, it is the less irritating; and if it is kept in the machine for three days compleat under a stream of the air, and frequently shaken during the last day, any irritation it occasions is scarcely perceptible; whereas, if it is kept in the machine 40 or 48 hours only, it occasions a very considerable degree of irritation. I made an experiment of this on myself not very long ago; and using it when it had only been kept in the machine for 36 or 40 hours, I had almost brought myself under a violent paroxysm, but gave it up in time to prevent that. I do not
know

know, however, but in this state its solvent power may perhaps be greater, where the patient having never lost any blood, may not run any risk in that respect; but I had suffered so much in this way formerly, that when I found the irritation great, and my urine beginning to be tinged with blood, I immediately gave it up, and betook myself to what was more fully impregnated; when the symptoms of an approaching paroxysm immediately gave way. It was however not long after this, that the piece of stone which gave me the greatest pain in getting quit of, came away; which made me think that perhaps the water in that state had a greater solvent power than

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when more fully impregnated, and of consequence was less irritating.

ANOTHER observation I have to make is, that the water seems to be most friendly to the human constitution. It begets a keen appetite, and greatly assists digestion, and consequently, in this unhappy disorder, in a good measure, supplies the want of exercise, when the patient is rendered utterly incapable of it. I have given it to many persons, young and old, and found it always to have this effect; and I have never found, in any one instance, any bad effect flow from it. One person, and only one, complained of being rendered costive by it, which is the great objection to ADAMS's Solvent;

vent; but, in all other cases, it had the contrary effect, not to any high degree, but just to keep the belly gently open. When I begun to use it, I had been using a very strict regimen. It was but a few things I could or durst take, without being much hurt by them; and I was, in consequence of this, and the long and severe distress I had been under, greatly emaciated and very weak; but I no sooner began to use it in any considerable quantity, but my appetite returned keen and sharp; and I soon found that I could with safety take a share of every thing, even of what had before hurt me most, such as salt meat, fish, and even barley broth, which had long been most pernicious to me. The only things which I found

I could not use with full freedom, were, all kinds of wine and spirits; and for a long while too I found even ale, both strong and weak, rather hurtful: But now I can take a few glasses of wine, or of spirits pretty much diluted with water, and can safely drink good brisk beer to my meat. I find, however, that the using as much as possible a milk diet is both most favourable to the disorder, and agrees best with the use of the water. Every thing too that is gently acid I have found agree well with both; such as, in the season, strawberries, kind or rasp-berries, black curran-berries, rhubarb tarts, goose-berries and tarts made of them, with apples and pears in every way they are used.

A THIRD observation I may make concerning the use of this water is, that I have found it of great use to me in other complaints, besides that of the gravel or stone. I had been, for many years of my life, much distressed with a frequent return of a severe bilious complaint, and with frequent roses upon my head, always attended with a violent fever of two or three days continuance, and sometimes longer. Since I begun to take the Alkaline water, though I have had several times symptoms of the rose, yet it has never come the length of forming fully into one, or been attended with any fever; and I have had only one attack this last winter of the bilious complaint, and I found that much alleviated by taking

at

at the time a double quantity of the water. Upon the whole, for these two years past, since I got free of the severe paroxysms of the stone, I have enjoyed as good health as ever I remember to have done for so long a time in any part of my life.

I MENTIONED that I had given the water to many persons, chiefly for sore throats and bilious complaints, in almost all of which it had a good effect; and in many effectually has cured them for the time.

ONE person, who had been for a long time, in the decline of life, distressed with an involuntary passage of urine, took it for some time very fully saturated,

rated, and in about two months got free of that troublesome disorder, and has now continued so for these two years past.

A SERVANT of my own, that was subject to a severe hysterical disorder, came to be so bad of it, that, after keeping her bed for some days, she was just endeavouring to collect her things to go and leave her service, when it occurred to me that I might try her with a tumbler of the water. She had not taken it ten minutes, when she found herself so much better, that, upon coming into the house, I found her at her wheel, as she thought, perfectly well; however, two or three more tumblers of it actually made her so. She has
continued

continued with me two years since ; and whenever she begins to feel it approaching, the same dose has regularly had the same effect.

BUT the most extraordinary case or recovery happened to a young gentleman in this neighbourhood, from a putrid disorder, by its means. The case is such, that it would not be easily credited, if not from himself or one of the family ; and I cannot use the freedom of giving it to you. Yet I think it might be of much importance to be fully narrated and known. If you will take the trouble to write to Mr. ROWAN, minister of the Largs, near Greenock, in whose family it happened, I think it is more than probable

bable he will not refuse to give you an account of it; and he can do it more fully than any other.

THUS, Sir, I have given you as brief an account of my disorder, and of the benefit I have received from the use of the Alkaline water, as I could, in my gravelish and other disorders. I could, no doubt, have still been much more particular; but I have not neglected any circumstance that I thought of importance. As to the publishing it, with my name added to it, I am not very fond of this; however, if you think it is of any considerable importance to the public to do so, and if Mr. CREECH, to whom I consider myself as highly indebted

Yours &c. &c. &c. in

in the whole matter, wishes it to be done, I shall give my consent. I beg my compliments to him; and am, with esteem,

Sir,

Yours most sincerely,

JOHN ROBERTSON.

To Mr. John Moncreiff.

No. VIII.

FROM DR. FALCONER'S TREATISE ON
THE AQUA MEPHITICA ALKALINA.

BENJAMIN COLBORNE, Esq. of Bath was, in the year 1760, attacked with a violent nephritic paroxysm, which, after continuing seven or eight days, and being treated with anodyne, oily,

oily, and mucilaginous medicines and bleeding, terminated in the discharge by urine of a red stone larger than a vetch or tare; after which he continued tolerably well for eight or ten months; often, however, observing small calculous concretions to come away, attended with irritation of the urinary passages. In about ten months after the first attack, he had another, but neither so violent nor of so long duration, which terminated like the first in the discharge of a stone of a similar colour to the foregoing, but of a smaller size. The nephritic paroxysm again returned in about five or six months, but not so violent as at first. During this time he was in a course of taking mucilaginous and lubricating remedies.

AFTER

AFTER this he made trial of Mrs. STEPHEN'S remedy, as prepared by Dr. D'ESCHERNAY, of which he took about an ounce in a day, once or twice a week.

AFTER this, he continued free of nephritic complaints about a year and a half. That medicine, however, agreed so ill with his stomach, producing nausea, indigestion, and crudities, that he was obliged to leave it off. About three or four months afterwards he had another attack, which returned again upon him every ten or twelve weeks. At this time he was in a course of taking an infusion of the wild carrot seed, and drank distilled water as his usual drink.

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IN the year 1766, he made a trial of BLACKRIE's lixivium (or CHITTICK's remedy), and though it agreed with him rather better than the soap, yet it was so caustic and irritating to the mouth and throat, and produced such painful sensations in his stomach, that he was obliged to leave it off; after which his nephritic paroxysm returned every eight or ten weeks as before. In the year 1774, he went to Spa for a complaint in his bowels, which he ascribed to the use of his caustic lixivium, and during the time of his drinking these waters, had no return of calculous complaints; but on his coming back to England he was attacked as formerly.

IN

IN the beginning of the year 1778, he made trial of water simply impregnated with Fixible Air, which proved too irritating and diuretic. On March 27th of the same year, he had an attack of the gout, which continued on on him until the 14th of April, when he was taken with a violent vomiting, attended with pain in the left kidney. By the help of the warm bath and bleeding, he passed another calculus. After this he had a second attack of the gout, which continued a few days.

As soon as it was over, he began the use of the alkaline medicine with Fixible Air, as above described, of which he took about about six or seven ounces twice a day. During the use of this
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he parted with no gravel ; his urine deposited no sediment whatsoever ; nor discoloured the vessel, though, if it was omitted even for a few days, these appearances took place, and small bits of gravel were perceivable in his water,

FROM this time he continued in perfect health, and free of all nephritic complaints, until the 26th of August 1783, when about three in the morning, he was taken with an irritation in the urinary passages, which prevented his sleep ; his urine, however, was not high coloured. About seven in the morning he had two purging stools. He had but little pain in the kidney, but a heavy obtuse sensation over the os pubis, which continued
with

with some sickness till about two o'clock, when the stone seemed to enter the bladder. From that time he became perfectly easy.

IN order to discharge the stone from the bladder, he drank large quantities of mucilaginous liquors, and retained his urine as long as possible. About six in the evening, he discharged a red calculus, smaller than what he had before done.

It is proper to observe that he had been at Harrowgate about four or five weeks before this happened, and drank the Harrowgate water, which as it acted not only as a purgative, but as a diuretic also, he was induced to think
he

he might safely omit the alkaline solution. It appeared, however, to his great disappointment, that the calculus was generated during that interval. From this time to the present, he has never, for two days successively omitted taking the mephitic alkaline solution, and has never since felt the smallest uneasiness; no grains of sand or other precipitation in the urine, nor any discoloration of the vessel, except when the medicine is omitted for a day. But, upon taking the solution again, the urine made afterwards dissolves the former discoloration, and still continues perfectly clear. During the time he was subject to nephritic paroxysms, his urine was subject to putrefy very soon; but since he has taken the solution,

tion, it will keep three or four days in the warmest weather, without shewing any signs of that disposition. His general dose, as a preventative, is about seven ounces daily. His health, strength, and spirits, are all perfectly good; and as he thinks, better than they were twenty years ago.

SINCE the above account was written, which is now about two years ago, Mr. COLBORNE has had two fits of the gout; the one slight, the other more severe, which last confined him for a fortnight. Both fits, however, went off perfectly well, without any translocation of the gout to the head, lungs, or any of the viscera. He drank the mephitic alkaline water, with the addition

dition of a little brandy, during both the fits, and it agreed with him perfectly well. His health, strength, and spirits, are as good now as they were two years ago.

DR. FALCONER'S REMARKS.

THIS Case exhibits an instance of a complete cure of a person, considerably past the meridian of life, who had been eighteen years afflicted in the most grievous manner with this complaint; and who had tried almost all the boasted remedies, without their affording any abatement of his sufferings, and with manifest injury to his general health.

health. In this instance, the mephitic alkaline water seems not only to have proved a specific remedy for the calculous complaint, but also to have repaired, to a degree superior to what could have been expected, the injuries done to the constitution, both by the fatigue and distress incident to the disorder, and by the violent remedies which were used previous to his being acquainted with the efficacy of the mephitic alkaline water. Time, the only test of truth in such instances, seems to have ascertained the fact of his recovery beyond any possibility of doubt. Nearly eleven years have now elapsed since he began to make trial of this remedy; and during that time he has had no other interruption of ease than what
might,

might, as clearly as we can trace any occurrence in medicinal practice, be ascribed to the omission of the remedy, before the tendency of the system to generate calculus was subdued. That time, however, appears to be now in a good measure arrived, as he is at present able to intermit the use of the mephitic alkaline water, without hazarding any of the painful symptoms, which before occurred, when it was omitted. It is not, however, clear that he would be able to forbear its use altogether; nor does this gentleman, I believe, mean to try such an experiment, which would be dangerous only, without utility.

THE

THE obvious effects of the water upon the general health, are in this case worthy of notice. Mr. COLBORNE's appetite, strength, complexion, and spirits, all indicate as good and confirmed a state of health, as is possessed by persons of the best constitution at his time of life ; and the returns of the gout, to which he is constitutionally subject, seem to have been rendered milder, and to have gone off more favourably, whilst he was under a course of the mephitic alkaline water, than at other times ; and never to have produced, as they frequently do, any aggravation of the calculous complaint.

No.

No. IX.

FROM THE SAME—Page 26.

THE Reverend Dr. COOPER, of Sunning, in Berkshire, a most worthy and amiable character, is likewise a remarkable instance of the efficacy of the neutralized alkaline solution.

BUT this gentleman's case is related by himself, in a letter to my late friend, with such accuracy and propriety, as well as animated description, suggested by the memory of feelings too severe to be erased, that I cannot forbear giving
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ing it to the reader in his own words ; subjoining also a confirmation of the benefit he had received, and of his present good state of health, extracted from a letter I myself had the pleasure lately to receive from him. One trivial circumstance I will take the liberty to remark, that Dr. COOPER, in one part of his letter to Dr. DOBSON, seems to have thought that the aqua mephitica alkalina, or alkaline solution saturated with Fixible air, was recommended in the Medical Commentary, as a remedy for calculous disorders ; whereas it is only recommended there, as containing a large quantity of Fixible Air, which was to be set loose by a subsequent addition of an acid, which was directed to be

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be taken immediately after the exhibition of the alkaline solution. It does not appear that Dr. DOBSON, at the time he composed the Medical Commentary on Fixed Air, was at all acquainted with the good effects of the alkaline solution, thus impregnated, in these complaints. Though he recommends its use, it is only with a view to its immediate decomposition by an acid. The remedy, however, from which Dr. COOPER received benefit, was, as appears from his own account, the alkaline solution saturated with Fixed Air, without any other addition; though he occasionally made use of the effervescent saline draught, when a machine

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for impregnating the water with the fixed Air was not at hand.

THE REV. DR. COOPER'S LETTER TO
DR. DOBSON.

DEAR SIR,

IT gives me great pleasure to hear you design taking up the pen again in favour of *Fixed Air*. The efficacy of that volatile principle (when combined with some alkaline salt) in putrid and other disorders, is sufficiently manifested in your very ingenious Commentary on that subject; and nothing now is wanting completely to establish its character, than the making better known to the world its superior virtues in nephritic

phritic complaints also. Of this superiority, I am sensible, you have several proofs before you, even in this place, and some of them much stronger than perhaps my case may be; nevertheless, if *that* can in the least degree promote the cause of truth, and assist your benevolent design, it is most heartily at your service. Indeed I feel myself under so great obligations to the virtues of *Salt of Tartar* and *Fixed Air*, for rescuing me from a state of misery and pain, and restoring me to the full enjoyment of health and ease, that it would appear the highest ingratitude in me to be silent, whenever it is in my power to do justice to their worth. —It was in the beginning of August 1772, if I recollect, that I was first attacked

tacked with what is called a fit of the gravel, which lasted about twelve hours; *hinc mihi prima labe*. As I had till then been quite a stranger to the nature as well as the symptoms of the disorder, I was at a loss how to account for the sickness and pains I felt, till a small stone, which came away, too well convinced me from what cause they arose. The continual apprehensions I now was under of having a return of those pains, and the dread I entertained of being afflicted with a complaint which I had always heard styled the *opprobrium medicorum*, destroyed every comfort, and embittered every hour of my life. I did not fail, however, you may be sure, Sir, having recourse to the best advice I could find, and took care scrupulously

pulously to adhere to every rule and every method of cure prescribed me. I soon perceived, nevertheless, with great concern, that my disorder, instead of abating, gradually increased, conformable to the just observation of Mr. POPE, that

“The young disease, which must subdue at length,

“Grows with our growth, and strengthens with

“our strength.”

I now continually voided great quantities of sand, or rather, of very small stones of a bright red colour; and, at the distance of every two or three months, and sometimes oftener, when a larger stone was formed than could easily pass the ureters, I underwent the most excruciating torments before it reached the bladder. The paroxysms,

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at these times, lasted full thirty hours, and once or twice much longer, attended with an acute burning pain in the region of the kidneys and round the abdomen, a numbness down my thighs and legs, a constipation of my bowels, with violent sickness at my stomach. Castor oil, fomentations, emollients, and warm bathing, which used before to afford me ease in common fits, here often failed of success, and nothing but opiate draughts could administer the least relief. Nor did my sufferings always terminate with the stone's being at length safely lodged in the bladder; for twice, in its endeavours to pass the urethra, the stone unhappily remained fixed there for several hours, and consequently brought on again an intolerable

table pain, with a total suppression of urine. To attempt giving an idea of what I felt on these occasions, is beyond the power of words; even at this distance of time, while I am now writing, *animus meminisse horret*:—It is to be conceived only by those, who have had the misfortune to be afflicted with the stone.

As I was convinced that the milder remedies, which I had hitherto followed, were unable to prevent a frequent return of these paroxysms, I determined to have recourse to more violent ones, such as *lixiviums* and *solvents*. Of the former, I preferred that recommended by Mr. BLACKRIE, known before by the name of CHITTICK's *Receipt for*
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the Stone. This I took regularly for four months, strictly observing the rules laid down with it. I do not remember I had any very violent attack of my complaint, during the course of this medicine; but it sometimes occasioned me to make bloody water, and I continually voided a good deal of gravel. Perceiving, however, that my health, spirits, and appetite, began to be affected by the septic regimen, enjoined to assist the operations of the lixivium, I thought it high time to leave it off; and soon after had the additional mortification to know, that, whilst every thing else, that could render life an object of desire, was about to leave me, my calculous complaints remained firm and rooted as ever.

FROM

FROM this caustic medicine, I turned my eyes to PERRY's Solvent, which, as I found its character and virtues came strongly recommended to the public under the sanction of many very respectable names, I lamented I had not thought of sooner, and considered all the time as thrown away, which I had hitherto bestowed on other remedies. My application, however, to this boasted medicine was followed by no better success than what had attended me before; for at the end of three months, during which time I took it, I found all my fond hopes and expectations at once destroyed, by one of the severest fits of the stone I had ever felt. Willing to give this celebrated solvent the fairest trial, I persevered in the use of it

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long after I found it by no means suited to my constitution; for it induced such a costive habit of body as rendered my life very uncomfortable, and sometimes was indeed quite alarming.

It would be difficult, as well as tiresome, to endeavour to enumerate the variety of other nostrums, which, during the course of full seven years, I was persuaded to swallow :

“ Non, mihi si linguæ centum sint, oraque centum,

“ Ferrea vox, omnes possim comprehendere formas.”

Let it suffice to say, that finding from none of them any other kind of benefit than temporary suspensions of pain, I quite despaired of ever meeting with any thing that would afford me essential and permanent relief. At length, however,

however, in the beginning of April 1780, a friend of mine put into my hands your publication, before-mentioned, on Fixed Air: pleased with the account given in it, of the many cures performed by *that* and *Salt of Tartar*, on putrid and other diseases, and with the great probability of the success of these combined articles in nephritic complaints, as likewise encouraged by the established character and reputation of its amiable author, I determined immediately to make trial of this extraordinary medicine; and accordingly provided myself with a Fixed Air machine, and apparatus necessary for the purpose.

ABOUT the middle of the same month I entered on a course of the Medicated

licated Water and Fixed Air, taking it in the form and quantity prescribed as in your pamphlet, and soon had great reason to congratulate myself on my undertaking. In about a fortnight's time I perceived a very sensible alteration in myself, as well with respect to my complaint in particular, as to my health in general; the latter I found greatly mended both as to my spirits and appetite; and the uneasy sensations of the former, about the kidneys, were entirely removed. I no longer voided either sand or gravel; nor did I feel that continual irritation to make water, which I did before; nor was my sleep disturbed by such frequent, yet fruitless calls to it; in short, from the happy enjoyment of ease and comfort, to
which

which I had so long been a stranger, I now seemed to myself quite a new creature.

I PURSUED this method about four months, when my farther progress in it was stopped by a feverish attack, which confined me for three weeks. As soon as that was removed, I had recourse again to the *Salt of Tartar* and *Fixed Air*, and have continued it, with little interruption, ever since. I can assure you, Sir, with the greatest truth, that from the time I began taking this medicine, to the date of the present writing, I have never had any the least return of my complaint, excepting once about two years and a half ago, I voided a small stone, without pain, about
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the size of a little pea or vetch, quite smooth, and almost perfectly round. I have, moreover, in every other respect, enjoyed an uninterrupted state of good health. When I am on a journey, or absent from home, when I cannot be supplied with a Fixed Air machine, I neutralize a dose of the solution of Salt of Tartar (sweetened with a little sugar) with lemon juice, which has the same effect as the mephitic acid.

WITH regard to regimen, I confess, I observe none, except the avoiding every thing salted or dressed too high. No other restriction of diet can be necessary with a medicine, whose virtues seem best assisted by those things which
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are at the same time, most salutary and agreeable to the nature and constitution of the human frame, such as wine, milk, fruits, vegetables, and the like. On this account, the medicine in question has certainly great advantages over those of the caustic kind ; for the same reason, perhaps, it may be supposed to yield to them in *solvent powers*. Nevertheless, if, as experience shews, it *prevents* the *formation* of those substances in the kidneys and bladder, which form the *human calculi*, or the *increase* of them after they are formed, its claim to merit as a *preventative* is equally great ; at the same time, when its perfect innocence, nay even beneficial effects on the constitution, are taken into consideration, few people, I believe, will hesitate to pronounce

nounce the *Medicated Water* and *Fixed Air* superior to all other medicines hitherto recommended for nephritic complaints. A fair trial of them for three years, will, I hope, fully justify me in asserting this superiority; and if health, ease, and comfort, are blessings we all covet and desire, the having reinstated me in the happy enjoyment of them, when well-nigh lost, must ever intitle the *Salt of Tartar* and *Fixed Air* remedy to my sincerest thanks and most grateful acknowledgments.

I am, dear Sir, with the truest esteem,

Your very obedient,

and very humble servant,

Bath, April 16th, }
1783. }

EDWARD COOPER.

N. B.

" N. B. I forgot to mention, that, in the spring of the year 1782, I was seized with a fit of the gout in both my feet, which confined me full three weeks; nevertheless, I still continued the use of my medicine, adding only to each dose about half a tea-spoonful of rum; nor did I find the least prejudice or inconvenience from it.

Extract of a Letter from the REV. DR.
COOPER, *to* WM. COOPER, M. D.
dated Dec. 18. 1784.

ALL that I have farther to add now, respecting myself, is, that I still continue as well, and as free from any return of my complaint, as I was when I drew up my case in April 1783. I constantly

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persevere in the use of the Alkaline Solution with Fixible Air, drinking once or twice a day, as it happens, about two ounces of the Medicated Water, which never fails acting as a preventative, and keeping me entirely free from every the least symptom of gravel or stone; though I have great reason to think, from the pain I have formerly felt in the region of my kidneys, that a stone is formed in one of them.—

IT may be necessary to remind the reader, that the quantity of alkali, contained in the solution used by Dr. COOPER, is double to that used by Mr. COLBORNE; so that the two ounces mentioned in Dr. COOPER's letter as his daily dose, are equal to twice that quantity

quantity of the solution directed in the former part of this work.

Extract of a Letter, dated April 1st, 1787.

MY health is, I thank God, full as good as when you last heard from me, nor have I had any, even the least, return of my old complaint, which I can attribute to nothing but my persevering in a course of the above mentioned medicine. I pursue the same method of taking it that I have done hitherto, excepting that now, I have seldom recourse to it above once a day, instead of twice, which I formerly had. The effects of it as a preventative I find equally powerful as they have ever been,
and

and long experience has fully convinced me that this medicine is no less innocent, than it is salutary to my constitution. It is true indeed I have had two fits of the gout, the one in September 1785, and the other in January 1787; but in neither did I desist from taking the Aqua Mephitica Alkalina. On the contrary, I continued it during the whole time of both these severe visitations, and, with the precaution of adding a tea-spoonful of rum or brandy to each dose, found it sit quite easy and comfortable on my stomach.

Extract

Extract of a Letter from the Rev. Dr.

COOPER, dated Nov. 26. 1788.

TO answer more particularly your inquiries concerning my present state of health, I have the pleasure to assure you that it is full as good as when I saw you last winter at Bath, 'bating the somewhat farther advance in age, and its attendant infirmities. I believe I then told you, that for the whole preceding summer, and great part of the autumn, I had been afflicted with a very painful and dangerous illness; and that during my confinement under it, which lasted near five months, I was obliged to abstain from the Aqua Mephitica Alkalina. I found, however, no inconvenience

venience from the disuse of it, either by any return of pain in my kidneys, or any other (even the least) hint of a gravelly complaint. Since that time I have again entered upon a course of that medicine, but neither in so large a quantity, nor so frequently repeated as before, as I now take it once only in the day, and that not regularly. Besides, whenever business or engagements call me from home, I oftentimes omit it for a fortnight together, and find myself justified in this omission by a total freedom from every symptom of, or tendency to, either the stone or gravel. Should I unfortunately find any hints of either of these, sufficient to alarm me, I should immediately increase my dose, and be more attentive to the frequent

frequent and regular returns of taking it; nor have I the least doubt, but that the virtues of the Aqua Mephitica Alkalina would soon disperse every anxious fear and uneasy foreboding.

DR. FALCONER'S REMARKS.

THIS case requires very little comment; it exhibiting a full and even minute account of a complete recovery from as painful a state as almost ever takes place from calculus. It is worthy remark here, that the tendency of the system to generate calculus seems nearly subdued, as appears from the use of the Mephitic Alkaline water being now capable of being omitted for

a time, and that a pretty long one, with impunity. Whether it might with safety be totally laid aside, does not appear; nor would it be prudent to hazard the trial.

No. X.

Extract of a Letter from Capt. BUNBURY.

SIR, *Sciennes, 12th July 1790.*

I have been violently affected, for many years past, with a bilious or stomachic complaint. In the years 1787 and 1788, it was so severe, as to deprive me for several weeks of the use of my limbs. For two years, I hardly knew
what

what sleep was, and I totally lost my appetite.

ALTHOUGH I consulted several eminent physicians, both in Britain and Ireland, I never received more than temporary relief. On the 18th of January last I began to drink the Aerated Alkaline water, prepared at your shop. Before I had used two dozen of English pints of the water, I recovered my appetite and sleep; and by continuing to use it, I have obtained strength in my limbs, and have not altogether been so well for several years.

I WISH, not only in justice to you, but for the benefit of the world, to

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make this as generally known as possible.

I am,

Sir,

Your most humble servt.

A^{BM}. BUNBURY.

To Mr John Moncreiff.

FROM THE SAME.

SIR, *Sciennes, 10th June, 1794.*

As you wish to be informed of the state of my health, since my letter to you, dated the 12th of July 1790, with a view to be inserted in your intended treatise on the Aerated Alkaline Water, I most chearfully comply with your desire.

I CONTINUED to take the Aerated Alkaline Water from the 18th of January 1790 to the 19th of August 1791, at which time I was so completely recovered as to think that it was no longer necessary to take the water; and never since have my complaints returned in such a degree, as to require the use of that medicine. I still, however, have at times some little return of my stomach complaint, which is generally occasioned by cold or wet feet. The only remedy I now take is magnesia, mixed in peppermint water, which always gives me relief. Before I began to take the water, magnesia had but little effect. I tried laudanum, to ease the pain; but it always disagreed with me. All kinds of spirits, diluted or taken plain, had

had the same effect. It is to the Aera-
rated Alkaline water that I attribute
the recovery of my appetite and strength,
and the good health I now enjoy. And
I am persuaded that there is no medicine
so well calculated as that water, for re-
lieving or curing stomachic or bilious
disorders.

I am,

Sir,

Your obedient servant,

A^{BM}. BUNBURY.

To Mr. John Moncreiff.

No.

No. XI.

Extract of a Letter from the Rev. Mr.
STEPHEN ROWAN, *Minister at Largs.*

SIR, *May 13th, 1794.*

ACCORDING to your desire, I transmit to you as distinct an account of the case of the young man who resides with me as I can. It is as follows:

THE young man, when returning from Grenada, in autumn 1791, was seized with a swelling in his thigh. As none on board the ship knew the nature of the disease, he was treated very improperly. A suppuration began; and
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he was about ten days confined to bed before the vessel arrived at Greenock, in the month of October said year, where he lay under the care of a medical gentleman ten days longer, till I got an opportunity of conveying him in the packet from Greenock to Irvine, where I then resided. His thigh, from the ham to the tip of the buttock, was then distended with bloody matter, which soon broke; but during the time that this matter had been in collecting, the mass of his blood had been corrupted; and a hectic fever now commenced. Dr. FLEMING, whose assistance had been called, used every mean to check the violence of the fever, which however continued so high, that his pulse was commonly 110, till about the middle of
March

March 1792, when he was seized with an universal rheumatism. About the crisis of this fever, his body smelled very offensively, though no part of his skin at this time was broken, and though the room was frequently sprinkled with vinegar, yet the smell was intolerable to a person continuing in it for a quarter of an hour. A physician and surgeon, whose assistance had been joined to that of Dr. FLEMING, had for some time considered his case as hopeless. As the only remaining effort, Dr. FLEMING recommended the use of the Mephitic Water; adding, that, as the whole mass of the youth's blood seemed to be fast going into a state of corruption, if any medicine could stop
its

its progress, that water would produce the effect. Without a moment's delay, I wrote a few lines, stating his case; and sent it by express to the Rev. Mr. JOHN ROBERTSON, one of the ministers of Kilmarnock, who had an apparatus for preparing the water, requesting him to send me what quantity he could spare, till I got a supply from Glasgow. In return he wrote me a most friendly letter, in which he expressed the strongest hopes of the use of the water proving, by the blessing of God, the means of his recovery. He instantly began to use the water, taking three wine glasses of it during the day. In the space of two days the putrid smell began to abate; by the evening of the fourth day it was
gone

gone; on the fifth and sixth day, his appetite quickened.

THE fever began gradually to abate, and his appetite continued to increase; so that, in the beginning of May, he was able to bear the jolting of a carriage, at which time I removed him to Largs. There he began to walk about with the assistance of crutches, and to try salt-water bathing, which perfected the cure which the Mephitic Water had begun. He still continues to reside with me, and now enjoys good health.

THE above is a general account of the young man's case, which you wish

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to communicate to the Public, but which I have unavoidably been obliged to narrate in a hurry.

I am,

Sir,

Yours sincerely,

STEPHEN ROWAN.

C O N-

C O N C L U S I O N.

FROM the foregoing Experiments and Cases, it appears, that the Aerated Alkaline Water possesses the medicinal qualities we have ascribed to it; and that the success with which its use has been attended, intitles it to particular attention.

THE Author could have laid before the Public a greater variety of Cases; but, as the persons, who were the subjects of these, would not permit their
names

names to appear, he judged it improper to publish Cases that might appear not sufficiently authenticated. He has taken the liberty to reprint two Cases from Dr. FALCONER's Treatise on the Aqua Mephitica Alkalina; principally, because few copies of that work have come to Scotland, and because the reputation of the Aerated Alkaline water, in gravelish disorders, chiefly took its rise from the success with which it was attended in both these cases.

As the Author wishes to continue his inquiries respecting the Aerated Alkaline water, he would beg leave to request of those into whose hands this Treatise may come, and who may have received benefit from the use of that
medicine,

medicine, that they would be pleased to communicate to him a particular relation of their cases. He likewise would be greatly obliged to medical gentlemen, if they would favour him with their observations, and mention any experience they may have had, in the course of their practice, of the use of that water, in relieving and curing diseases.

F I N I S.

ERRATUM.

Page 101. l. 11. *for ten read five.*

The Binder will place the Plate immediately after
Introduction.

